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PUBLIC INSTRUCTION IN THE SOUTHERN PRESIDENCIES DURING 1895-96.

The Reports of the Directors of Public Instruction of Bombay and Madras for the official year 1895-96 have been sent to us and we propose to open our notice of them by comparing the state of education during the past year in the two Presidencies.

The most casual observer will be struck with the great difference in the length of the two reports. The Bombay Report fills 39 folio pages, and to it are attached 82 pages of Appendices and 6 pages of the Resolution of the Bombay Government, while the Madras Report occupies 113 folio pages and is accompanied by four statistical maps, 98 pages of Appendices and 12 pages of the Order of the Madras Government. The reason for this marked difference in the length of the reports is not apparent, for excluding the number of institutions, the two Directors seem to be fairly evenly match-

ed as regards the scope of their labours. The following table illustrates the above remark :—

	Bombay Director.	Madras Director.
Area in square miles	1,93,149	1,41,350
Estimated population	26,966,242	35,641,828
Number of Public Institutions	10,082	20,932
Number of Private Institutions	2,856	5,134
Number of pupils in Public Institutions...	627,541	689,191
Number of pupils in Private Institutions.	76,676	102.443
Total Expenditure on Education ...	Rs. 72,86,805	Rs. 66,04,660
Expenditure met from Provincial Funds.	Rs. 21,71,745	Rs. 20,10,772

We are not prepared to say whether one report should be expanded or the other abbreviated but we are content, without any comment, to simply state facts as we notice them.

The number of institutions and of pupils is shown in the following table :—

	BOMBAY.		MADRAS.	
	Institutions.	*Pupils.*	*Institutions.*	*Pupils.*
PUBLIC INSTITUTIONS.				
UNIVERSITY EDUCATION.				
Arts Colleges	10	1,669	37	3,400
Professional Colleges ...	4	846	6	984
School Education (General.)				
Secondary Schools	458	50,928	736	45,514
Primary Schools	9,556	570,652	20,032	633,748
School Education (Special.)				
Training Schools	18	880	82	1,716
Other Schools	36	2,566	39	3,829
	10 082	627,541	20,932	689,191
PRIVATE INSTITUTIONS	2,856	76,676	5,134	102,443
	12,938	704,217	26,066	791,634

The above statement shows that there exists a striking difference in the state of education in the two Presidencies. While Bombay can accommodate 627,541 pupils in 10,082 public institutions, Madras requires for the accommodation of 689,191 pupils no less than 20,932 public institutions. Doubtless some of our readers will be able to suggest satisfactory reasons for the phenomenon and we shall be glad to have the matter discussed in these pages. As regards University Education, Bombay is apparently far behind Madras and in this respect, if in no other, the latter falsifies its claim to the title of "benighted," for while Bombay has 1,669 pupils studying in 10 Arts colleges and 846 pupils in 4 Professional colleges, Madras can boast of 3,400 pupils under instruction in 37

Arts colleges and 984 pupils in 6 Professional colleges. When we come to Secondary schools matters are reversed, for Bombay has 50,928 pupils and Madras 45,514 pupils. What does this mean? Does it indicate that Bombay pupils prolong their education into the secondary stage to a larger extent than Madras boys, or does it show that the Madras Matriculation is too easy and permits scholars from Secondary schools prematurely to enter upon University education or to seek for employment armed with the Matriculation certificate? In Primary schools Bombay is slightly behind Madras as regards pupils (570,652 against 633,748) and very much behind as regards institutions (9,556 against 20,032). With respect to the training of teachers, Bombay lags behind, for she has only 880 pupils under training against 1,716 in Madras. In the matter of Training schools the Eastern Presidency is very much "spread out" for she possesses no less than 82 such institutions against 18 in Bombay. Over the figures for schools for special education, other than Training schools, we prefer to maintain a discreet silence—the tabular statement points the moral without, we regret to say, adorning the tale.

As regards the communities from which pupils are drawn, the following two statements are instructive, for they show that, on the total number of pupils, Bombay has the larger proportion of Brahmans; while, on the number of pupils undergoing University training, Madras shows an immense preponderance of that class.

Total Number of Pupils.

	Bombay.	Madras.
Europeans and Eurasians	4,720	7,920
Native Christians	10,609*	58,609
Muhammadans	141,237	96,088
Brahmans	109,005	103,206
Non-Brahman Caste Hindus	395,395	484,471
Others	43,251†	41,340
	704,217	791,634

Number of Pupils undergoing University Education.

	Bombay.	Madras.
Europeans and Eurasians...	83	67
Native Christians	102*	346
Muhammadans	67	60
Brahmans	1,105	3,005
Non-Brahman Caste Hindus	612	895
Others	546†	11
	2,515	4,384

* Includes Goanese. † Includes Jews and Parsis.

The Muhammadans in both Presidencies seem extremely backward in availing themselves of the advantages of University education. The enlightened Parsi community enables the "others" to make a good show in the above tables, as far as they refer to Bombay.

The total expenditure on education works out in favour of Bombay as shown below :—

	Bombay.	Madras.
Provincial funds	Rs. 21,71,745	Rs. 20,10,772
Local funds	„ 9,74,366	„ 9,09,061
Municipal funds	„ 4,05,434	„ 2,24,011
Fees	„ 16,03,471	„ 18,42,880
Other sources	„ 21,31,789	„ 16,17,930
	Rs. 72,86,805	Rs. 66,04,650

The total expenditure is distributed as follows, the figures given being percentages :—

	Bombay.		Madras.
University Education			
Arts Colleges	5·4	..	9·32
Professional Colleges	1·4	...	3·44
School Education (General)			
Secondary Schools	25·3	...	60·68
Primary Schools	44·7		
School Education (Special)			
Training Schools	2·3	...	7·54
Other Schools	5·1		
University	2·0	...	2·76
Direction and Inspection	4·9	...	6·98
Scholarships	1·8	...	1·02
Buildings	6·8	...	7·17
Miscellaneous, including Grants for furniture	·3	...	1·09
	100·0		100·00

It will be seen that in Bombay, University education does not absorb such a large proportion of educational funds as it does in Madras, while the reverse is the case when we come to School education (General). The Madras report does not calculate the percentage for Secondary and for Primary schools separately, nor for Training schools and for other special schools. This, we venture to suggest, might be remedied in future reports. "Direction" and "Inspection" are more costly luxuries in Madras than in Bombay, but why this should necessarily be the case, we are not able to

explain. Bombay is more liberal than Madras in the matter of scholarships.

We shall now proceed to notice the reports separately.

Bombay.

In the report for 1871-72, which was the first written by the present Director, Mr. Chatfield, there were about 200,000 pupils, shown as under instruction, so that the average increase during the 24 years, during which he has held charge, has been nearly 18,000 and this about represents the excess of pupils shown in the report under notice over those shown in the report for 1894-95. The first of Mr. Chatfield's reports gave 8 Arts colleges with 623 students while the figures for 1894-95 and 1895-96 are 9 such colleges with 1,653 students and 10 such colleges with 1,669 students respectively. In Mr. Chatfield's first report, 15 students are mentioned as having obtained the Arts degree: while in the reports for 1894-95 and 1895-96 the figures are 168 and 139 respectively. No doubt the chief stimulus to persons to graduate at the Bombay University was Sir Richard Temple's offer to graduates of a monopoly of the higher appointments in the Revenue Department, but nevertheless the advance of higher education during Mr. Chatfield's long tenure of office must have been highly gratifying to that distinguished educationist.

Though there was a decrease in the strength of the Poona College of Science, the number of students in Professional colleges rose from 702 in 1894-95 to 846 in 1895-96.

As regards Secondary education we find that in 1871-72, 227 students matriculated whereas in 1895-96 the number was 944. In 1894-95 there were 28,459 pupils attending High schools and 20,418 attending Middle schools. The corresponding figures for 1895-96 are 30,314 and 20,387.

The statistics regarding Primary education may be summarised as follows:—

	1894-95.	1895-96.
Boys	5,07,566	5,23,862
Gi[illegible]	45,411	46,790
	5,52,977	5,70,652

There is but little to mention regarding the education of special classes. The number of pupils at the Rajkumar College fell from

39 to 37, but matters show an improvement at the other end of the social scale, for in the Central Division among "Aboriginal and Hill Tribes" the number of pupils rose from 1,563 to 1,675, 8 of them being in Secondary schools and 1 in the Training College. In the Northern Division the number rose from 6,858 to 7,438 and the Bombay Government has sanctioned a special grant for the Surat District.

Normal schools for masters and mistresses do not seem to participate in the general progress as may be gleaned from the following figures:—

		1894-95.		1895-96.	
		Schools.	Pupils.	Schools.	Pupils.
Normal Schools for Masters	...	8	658	8	653
Do. for Mistresses	...	10	217	10	227

The same remark applies to other institutions for special instruction except "Gymnastic Institutions" and "Agricultural Classes."

There are no Boarding Houses attached to Colleges. 665 pupils of Secondary schools monopolised the 10 boarding houses for boys given in the report. 446 pupils of Secondary schools and 9 pupils of Special schools similarly represented the inhabitants of the same number of such establishments for girls.

The figures, given in the report, for pupils attending schools in Bombay City will probably remain record ones for some years to come, for the bubonic plague has from all accounts emptied the educational institutions of the Presidency town:—

Primary Schools	... ...	17,686
Secondary Middle Schools	... ...	4,020
Secondary High Schools	... ...	10,368

The Bombay Government closes its review of its Director's report as follows:—"On the whole the present report of Mr. Chatfield, like the majority of those submitted by him during the many years of his administration, which is now drawing to a close, is a history of steady general progress," and to this short laudation is added a summary of the losses the Department suffered during the year through the death or the retirement of several well-known officers.

Madras.

There was a marked advance during the year under notice in the number both of institutions and of pupils. The number of

institutions, both public and private, increased by 884 and the number of pupils by 27,280. The percentages of boys and girls under instruction to the male and female population of school-going age in the different groups of districts were as follows:—

	Boys.	Girls.
Northern Districts	21·6	3·4
Ceded „	22·1	2·5
Central „	28·0	5·0
Southern „	30·3	3·5
Inland „	21·2	2·7
West Coast „	30·1	7·6

The proportion of children under instruction to the total population was, on 31st March, 1 in 45, as against 1 in 47, 1 in 48, and 1 in 49 in the three preceding years respectively. The proportion was highest in Madras (1 in 11), Nilgiris (1 in 24) and Tinnevelly (1 in 31), and lowest in Vizagapatam (1 in 89), Cuddapah (1 in 64) and Salem (1 in 60).

The results of the University examinations compare on the whole favourable with those of the last four years. The figures for the Matriculation examination show that candidates have adapted themselves to the altered conditions of the examination, which were introduced in 1892.

Matriculation Examination.

	Number passed.	Percentage of success.
1891-92	2,381	30
1892-93	520	15
1893-94	776	23
1894-95	918	22
1895-96	1690	37

The number of those who obtained the B.A. degree was 535—a record figure. 12 candidates out of 27 obtained the M.A. degree.

The tabular statement, already given, shows that there was an increase both in the number of Arts colleges and in the number of pupils attending such colleges. In the light of the recent discussion on the relation of Mofussil colleges to the University, it is interesting to note that, of the 3,400 college students, 1,481 were reading in eight colleges in Madras and 1,919 in twenty-nine colleges in the Mofussil. The net cost to Government of each student

in a Government college was Rs. 211-9-7. In aided colleges the net cost was Rs. 117, of which Government contributed Rs. 43. Thus, as the Director remarks, "the cost to Government for every student educated in its own colleges was nearly five times as much as in the aided colleges." Verily, the B.A., the F.A., and his "failed" companions are expensive luxuries. There was a satisfactory rise in the attendance at Professional colleges.

The number of Secondary schools remained unaltered while the pupils increased by 6 per cent. In Upper Secondary schools, the pupils increased by 10 per cent, and about one-fifth were reading at schools in Madras and four-fifths at Mofussil schools. The percentage of candidates who passed the Matriculation from Upper Secondary schools was 41 against 37, the average for the Presidency. The cost per pupil was Rs. 30. As regards Lower Secondary education, English Middle schools showed a slight increase in number and Vernacular Middle schools a slight decrease, but this is accounted for by some of the weaker institutions going to the wall. There was an increase in the number of pupils at both classes of Middle schools.

The number of Primary schools, both upper and lower, increased by 417 and their pupils by 13,328 as compared with the preceding year. The decline therefore, which was noticed in the last report, was thus arrested and the lost ground more than recovered. Public funds contributed Rs. 9,35,186 towards Primary education. Government remarks that "the steady increase noticeable from public funds is accounted for by a corresponding and regrettable decrease in that from fee revenue. The decrease in the fee income is clearly traceable to the operation of the school fee notification which came into force on the 1st January 1892. This leaves the levy of fees to the option of managers of schools." The lowering of fees in Primary schools does not appear to us to be a matter of regret, for it enables the poorer classes to more freely share in the benefits of elementary education.

There was a slight fall in the number of pupils attending training schools for masters and mistresses, and this constitutes one of the unsatisfactory features in the report. The attendance of Panchama (Pariah) pupils rose to 47 from 11 in the previous year. This is

attributed largely to the opening during the year at Madras of a special training school for this class.

As regards other special schools, the number of technical, industrial or art schools remained stationary at 36, 13 of which were schools (like the School of Arts) teaching several subjects, 18 (like the School of Engineering) teaching one subject, and 5 of a lower class. The number of pupils in them increased from 3,035 to 3,430. The expenditure from Provincial funds decreased from Rs. 73,988 to Rs. 66,014, while the total expenditure rose from Rs. 1,70,721 to Rs. 1,74,421. The variations in the number of students learning the principal industries were as follows :—

Year.	Drawing.	Music.	Carpentry.	Blacksmith's work.	Tailoring.	Weaving.	Boot and Shoe-making.
1891-92 ...	687	60	667	89	155	109	50
1892-93 ...	869	295	555	108	184	114	39
1893-94 ...	1,082	261	571	113	210	157	29
1894-95 ...	1,401	313	520	151	160	126	65
1895-96 ...	2,306	387	609	128	208	129	54

The advance in "Drawing" is no doubt satisfactory, but we should prefer to see an advance in the number of industries rather than in the number of persons learning a few industries.

There were over a lakh of "females" undergoing instruction, of which number only 8 were attending colleges.

The Madras Presidency does not possess any institution similar to the Rajkumar College, Lord Connemara's scheme for establishing an institution of this description having fallen through. The total number of Muhammadan pupils rose from 90,570 in 1894-95 to 96,088 in 1895-96, but there was a decrease in the number of Muhammadan pupils in Professional colleges, in the Upper Secondary stage, in Training schools and the Private institutions of an advanced character. The percentage of Muhammadan pupils to the total number of scholars was 12·1, and is nearly double the proportion which the Muhammadan population bears to the entire population

of the Presidency. The number of Muhammadans successful at the University examinations was as follows:—

Matriculation	...	31
F. A.	...	4
B. A.	English language ...	10
	Second language ...	12
	Science division ...	12

The failure of Muhammadans at the F. A. examination of December 1895 is a serious matter and will handicap the community for several years in the race for the B. A. degree. The education of Panchamas has lately attracted a good deal of attention and it is satisfactory to learn that Panchama schools and scholars are increasing in number. Aboriginal tribes also made an encouraging advance in education.

The Boarding House scheme in the Madras Presidency received a good deal of encouragement from Lord Wenlock's Government and the results are seen in the figures for Boarding Houses furnished in the report.

148 students of Arts colleges and over 3,000 other students were accommodated in boarding houses for boys, while 4 female students of Arts colleges and over 3,238 other female students were similarly accommodated.

The Madras Government concludes its review as follows:—

"The year under review was not marked by any special innovations in the policy of the department. Generally there was steady progress in all directions. Already there is clear evidence that the inferior and ill-directed schools which were extinguished by the operation of the last issued educational rules are being replaced by well-conducted institutions conforming to the standards of the department, while educational effort is being expended and concentrated more economically and efficiently than before on the establishment of schools possessing surer elements of permanency. The advantages which attend the controlling of students outside their schools by extending the tutorial system and establishing hostels and boarding houses, &c., have been kept in view. In conclusion, the Government desires to acknowledge the good work done by the Educational officers of all classes during the year and to thank the Hon'ble Dr. Duncan for his successful administration of the department."

DEPARTMENTAL STORIES.

BY "RIVERSIDE DWELLER."

The Ideal and the Real.

For nine long years the Principal of the Government Normal College has laboured at the task of training teachers how to teach and he had not discovered the ideal master. Every student, however good in other respects, failed at some one point. But all things come to him who can wait and in his tenth year of service the Principal hit upon *the* man—a Brahman graduate, Ramaswami Rao by name, who seemed to have no weak points in his pedagogic armour. Needless to say this individual carried off all the prizes as well as the gold medal annually awarded to the best student; he passed out of the College with the highest possible honours, outdistancing every competitor; and at the University tests (to use the Principal's favourite expression) he "examined his examiners."

It was the custom at the Government Normal College for the students to spend their last day at the institution in festivities. Their College course was ended; their examinations were things of the past; they were about to soon enter on the work of their life-time. And, who will grudge them one short day of joy-making? Accordingly, on a certain date of a certain December we find the students celebrating their "going-away day." Our pen does not run smoothly when we try to describe entertainments, but fortunately an obliging Matriculate has come to the rescue and we are able to present our readers with a graphic description of the grand doings on the occasion :—

"The College grounds were decorated with a grand display of flags and buntings * * *. The day's proceedings commenced with a sumptuous *chota hazari* to the guests present, which was followed by athletic sports such as tennis, foot-ball, and other outdoor games, while some who were not so inclined strolled about or were engaged in *tête-a-tête*. Then the Business Conference commenced at 8-30 A.M. * * * *. At 10-30 A.M. a sumptuous dinner was provided for the guests in various rooms with due respect to caste distinctions. Dinner being over at 12-30 P.M., the audience

were entertained with vocal music accompanied by the violin for an hour-and-a-half. An agreeable deviation from the programme consisted in a splendid display of sword exercises, * * *. Tea followed and then the guests assembled in the college hall at 3-30 P.M. * * *."

The Principal, dressed in the suit of clothes which he donned on festive occasions, took his seat on the *dais*, with the Vice-Principal on his right and a guest on his left. In front of him, planted on chairs, were the members of the staff and behind these gentlemen were arranged the students to the number of about eighty. When everything was ready, the Principal rose and addressed the students. They were leaving, he said, to take up their appointments as masters in various schools and he hoped they would put into practice what they had learnt at the Normal College. He gave them much sound advice about attention to duty, punctuality, discipline, honesty, respect to superiors and a variety of other matters. He continued his speech thus:— "It gives me much pleasure to announce that I have secured a really good appointment for the best man of the year, Ramaswami Rao, namely, the Head Mastership of the Progressive High School at Bogusnugger, on a salary of Rs. 120 a month. This institution is an aided school under native management and, as you all know, Government is anxious to encourage education through the instrumentality of the people themselves. The manager is a most enlightened and wealthy native gentleman, who is an enthusiast in the cause of education. He has offered a salary much above the average, for he desires to have a really good Head Master and I am glad to think I can provide him with such a man." The Principal concluded by exhorting his show pupil to do his duty in such a manner as to bring credit to the College, at which he had obtained his technical training.

On resuming his seat, the Principal, the Vice-Principal and the guest were garlanded and sprinkled with rose-water and the proceedings terminated with a noise, which, we are informed on the best authority, was really three cheers for the Principal.

* * *

About six months after the day, referred to above, the Principal happened to meet the Collector of Bogusnugger, who had come to the Presidency Town to embark for Europe on furlough, and

remarked "You must have seen my crack student Ramaswami Rao at Bogusnugger. His manager writes to say he is doing really good work."

"No," replied the Collector; "I have not met the man. It is strange however. What is the Manager's name?"

"Jimcrackyswami," answered the Principal. "He is a most enlightened native gentleman, who takes a great interest in education."

"Strange!" replied the Collector, looking perplexed, "I have not heard of him. I only know one Jimcrackyswami and about three months ago I nearly ran him in for breaking the Abkari regulations. Some links in the evidence were wanting and he escaped. But, of course, your man cannot be the same."

"No," said the Principal—"cannot possibly be the same. Natives so often have the same name."

"Of what school did you say your crack pupil was Head Master?" asked the Collector.

"The Progressive High School," replied the Principal.

"Very odd," retorted the Collector, looking more perplexed than before; "I have never heard of that establishment. Are you sure it is in Bogusnugger?"

"Quite sure," replied the Principal. "The Manager writes to me twice a month regularly and apparently the school is a model one."

"I am much interested in education," said the Collector, "and shall make enquiries about the Progressive High School when I return to my District on the expiration of my furlough." The two then parted, the Principal to go to his College and the Collector to embark.

* * *

The *tapal* was on the office table when the Principal arrived at the College and the first letter he opened made him pull a very long face. The writer was his late crack pupil and document ran as follows:—

(*Confidential.*) PROGRESSIVE HIGH SCHOOL,
BOGUSNUGGER.

Respected Sir,

I write to let you know the disagreeable and humiliating conditions under which I am now working at the Progressive High School.

The institution is located in a tumbled down old building, which with the greatest difficulty has been made to satisfy the conditions prescribed in the Educational Rules, and it is only by effecting certain repairs and using lots of whitewash immediately before the inspection takes place, that the manager contrives to satisfy the conditions for grant. The furniture is in keeping with the building and is not in ordinary use. It is only made use of when the Inspector comes.

You described the manager as an enlightened and wealthy native gentleman, who is an enthusiast in the cause of education. I deeply regret to say that Mr. Jimcrackyswami is nothing of the sort. He is an uneducated barbarian and is engaged in an illicit trade in arrack and he keeps a disreputable grog-shop. The school is only maintained to provide him free of charge with a certain number of subordinates for his business and does not cost him anything—in fact he makes money out of it. For instance, I act as his Private Secretary and the First Master, who does no teaching, manages the grog-shop, while the Gymnastic Instructor is the chucker-out at the same establishment.

I am grieved to say that the salary of Rs. 120, which I was promised, is in reality about Rs. 60 a month and even this modest sum is three months in arrears. I am compelled monthly to sign the acquittance roll for Rs. 120 and the Manager therefore draws Rs. 40 government grant for me. I only get however Rs. 60, which means that I cost the Manager only Rs. 20 over and above the Government grant. Recently, the Collector nearly discovered Mr. Jimcrackyswami in a serious irregularity in connection with the Abkari laws, and it was only by paying Rs. 1,000 to certain subordinates to suppress evidence that the Manager escaped the Collector's clutches. This drain on his resources has nearly turned the manager bankrupt and he has not paid even our reduced salaries for the last three months. We all however regularly sign the acquittance roll for our full imaginary salaries.

Now for my work. From 7 A.M. to 9 A.M. I act as the Manager's Private Secretary and I fear my doing so will eventually land me in prison as his accomplice in various fraudulent transactions. At 10 A.M. I go to school. It is a standing order that the school must not begin until the manager's son arrives. When this

urchin puts in an appearance, which he usually does about 10-20 A.M., the clock is put back to 10 o'clock and one of the pupils rings the bell—for the two school peons are employed elsewhere. I have five hours teaching daily, for, as I explained before, the First Master (salary Rs. 90, Government grant Rs. 30, real salary Rs. 45) is on deputation at the grog-shop and the other masters, myself included, have to do his work. From 4 P.M. to 6 P.M. I have office work in connection with the school, including the preparation of the falsified returns to the Inspector. From 7 P.M. to 9 P.M. I act as Private Tutor to the Manager's son. I am on duty at the Manager's house as Private Secretary during Saturdays and Sundays. For the extra work I receive no remuneration. Everying is covered by the Rs. 60 I get (irregularly) as Head Master.

You will remember I took up Chemistry and Physics as my optional subject for the practical examination at the Normal College and the examiners commended the manner in which I performed the experiments. I promised you I would show the Bogusnugger boys as many experiments as possible. I regret to say that the Progressive High School possesses neither scientific apparatus nor reagents. All experiments are performed on the black-board, that is, when any chalk is available, for even the supply of the humble carbonate is very limited in my school. When the Inspector comes, the apparatus and reagents, prescribed by the Educational Rules, are borrowed from the Apothecary and shown to the Inspector. They are returned the same evening.

I took much interest in Gymnastics at the Normal College and meant to encourage them at Bogusnugger, but the gymnastic appliances at the school are dangerous to life and limb. The Gymnastic Instructor (salary Rs. 15, government grant Rs. 7½, real salary Rs. 10) should attend the school two hours daily, but he only comes for one hour a week, for, as I explained before, he performs important functions at the Manager's place of business. When the Inspector comes, the gymnastic appliances are patched up and a few professional gymnasts are hired.

I shall be most delighted to sever my connection with the Progressive High School of Bogusnugger, but the Manager has my salary in hand. As I have signed the acquittance roll I can claim nothing.

I hear the 17th assistant's post under you is vacant on Rs. 20 a month and I implore you to confer the appointment on me.

I beg to remain, etc.,

A. RAMASWAMI RAO.

PHYSIOLOGY *versus* PHYSIOGRAPHY AT THE FIRST-EXAMINATION-IN-ARTS OF THE MADRAS UNIVERSITY.

Previous to December 1892 Physiology was obligatory on candidates appearing for the First-Examination-in-Arts of the Madras University. From December 1892 onwards such candidates were permitted to exercise a choice between Physiology and Physiography, and it was thought in certain educational circles that the latter subject would be more favoured by candidates than the former. This expectation has not been realised, as may be seen from the figures relating to the last F. A. Examination (December 1896), which have been furnished to us by the courtesy of the Registrar:—

	Number of candidates.	Number passed.	Percentage of passes.
Physiology ...	1,512	819	54
Physiography ...	153	96	63

The proper understanding of Physiology entails an elementary knowledge of Anatomy, which can only be acquired by dissection—though we hear that occasionally diagrams, assisted by the teacher's drawings on the blackboard, do duty for the practical investigation of an animal's internal economy. Dissection of animals is—or rather is supposed to be—abhorrent to high-caste Hindus generally, whereas the study of Physiography can be undertaken without offending the caste prejudices of the most orthodox. Why then does Physiology retain such a commanding lead over its rival optional subject? The reason, we think, is capable of satisfactory explanation. After an experience of eleven years at an institution where both Physiology and Physiography have been taught, to all intents and purposes, up to the F. A. standard, we have no hesitation in saying that the former is the easier subject, in which to prepare candidates for the ordeal of the examination

room.—Given a Matriculate with an elementary knowledge of Anatomy, such as can be obtained in about twenty lectures and half-a-dozen dissection classes, and a fair acquaintance with the rudiments of Chemistry, such as must be possessed by the better class of Matriculate, an efficient teacher should have but little difficulty in bringing his pupil up to the F.A. standard. With Physiography it is different. The subject, which should be called "Introductory Science," is a veritable "resurrection pie," and includes the following branches of science :—Physics, Chemistry, Mineralogy, Geology, Physical Geography, Meteorology and Astronomy. And we are not sure that we have included everything. At the end of this article we reproduce the F.A. syllabus and the papers set at the F.A. examination of December 1895 and December 1896. They, we think, fully bear out our statement. No doubt the amount of knowledge, required in each of the above branches of Science, is small; but the fact remains that the number of branches is great. And herein lie the main difficulties.

To begin with, it is almost impossible to discover among newly-fledged Madras graduates a man, who is really competent to teach Physiography. Of course, in saying this, we assume that the teacher is expected to have attained a very much higher standard than that up to which he is required to teach. None of the science branches of the B.A. degree are sufficiently comprehensive to enable a man, who has passed in one of them, to lay claims to such a knowledge of the matter, incorporated in the Physiography syllabus, as to entitle him to be considered a competent teacher of that subject. No doubt many a science graduate has become a good teacher of Physiography by extending the scientific knowledge, he obtained at College, and we could name at least one such graduate. But we feel sure that the facts are as we have stated them.

The next and possibly the greatest difficulty of all lies in the examination or rather in the expectation of the nature of the examination. In a subject, constituted as Physiography is, the examinations from year to year are liable to vary as regards scope and standard, to a greater extent than would be the case in a compact subject like Physiology. We reproduce some of the examination papers, set during recent years at the Government Technical examinations. These papers were set to all intents and purposes on the same syllabus, which is very similar to the F.A. one, and with-

out in any way questioning their suitability, we think their varying scope bears out our assertion.

The third difficulty which presents itself is the apparatus. There are persons, who consider a few diagrams and a blackboard sufficient apparatus for the teaching of Physiology and Physiography up to any standard; and some are even able to dispense with the diagrams. But the ideal teacher would require for illustrating lectures in Physiology up to the F.A. standard, a skeleton, a dissecting case, a microscope and a number of mounted slides together with a few other appliances. What would a correspondingly good teacher of Physiography require? He would need a collection of minerals and rocks, terrestrial and celestial globes, thermometers, barometers and other meteorological apparatus, and a certain amount of physical and chemical apparatus. In fact, the question of expense obtrudes itself here as it has a habit of doing elsewhere.

Lastly, we have the difficulty about text-books. Physiology is a science by itself and some of the text-books on it are excellent in every way. Students have no difficulty in finding one or more such books to suit the requirements of the F. A. examination. It is different with Physiography. We have had a varied experience of text-books in this subject. There is hardly one of them which resembles the other. Were it not that they are all labelled "Physiography," the ordinary reader would never imagine that these publications deal with one and the same subject. One writer makes Physics the chief branch of Physiography, another favours Astronomy, another Geology, another Meteorology, and so on. An advanced student might possibly find it advantageous to have the subject treated in such a variety of ways but to the average Matriculate preparing for the F.A. examination, the variety is the reverse of pleasant.

We are aware that we have not discussed this matter from the highest possible standpoint, for we have dealt with it chiefly from the examination point of view, but so long as candidates are human beings, their chief aim will be to get through their examinations as best they can. No doubt at the last F.A. examination, the candidates in Physiography secured a larger percentage of passes than those who appeared in Physiology, but, after our experience of the

teaching of, and the examinations in, the two subjects, we should advise Matriculates under ordinary circumstances to choose Physiology as their optional subject at the F.A. examination.

SYLLABUS IN PHYSIOGRAPHY FOR THE FIRST-EXAMINATION-IN-ARTS.

Matter and Energy.—Elementary ideas of the various conditions of matter as regards stress, motion, and energy, embracing heated states, electric and magnetic states, cohesion, and gravitation.

Elementary notions of chemical action.—The formation of binary compounds. Breaking up of compound matter into simpler forms. The chemical elements. Water, its composition and different states.

Chemical and physical characters of the crust of the earth.—The chemical elements of which the crust is chiefly composed. The most abundant binary compounds occurring in mineral bodies. Difference between crystalline and non-crystalline substances. The common rock-forming minerals. Granite rocks and volcanic products,—lavas, scoriæ, pumice, and dust. Sedimentary rocks,—conglomerates, sandstones, shales, and clays. Rocks of organic origin and their chemical composition,—chalk, coral-rock and other limestones, peat and coal. Altered rocks,—slates, schists, gneiss, Nature and origin of soils.

Internal terrestrial phenomena.—Observations indicating an increased temperature in the interior of the earth. Volcanic phenomena and distribution of volcanoes. Earthquakes and slow upheavals or subsidences of the earth's crust.

The Sea.—Salts dissolved in sea water; depth and form of sea bottom, remarkable inequalities; distribution of temperature and density. Phenomena of Arctic and Antarctic regions; blocks, pack ice, icebergs, &c. Action of the sea upon the earth's crust. Influence of the sea in the distribution of climate.

The Atmosphere.—Height and composition; atmospheric pressure; use of the barometer. Distribution of temperature, horizontal and vertical. Use of the thermometer. Evaporation and condensation. Aqueous vapour, rainfall, ice, and snow. Regions of extreme dryness and of great rainfalls. Land and sea-breezes. General conditions of climate. Action of rain, springs, rivers, and glaciers upon the earth's crust. General ideas of the changes which the earth's surface has undergone in the past.

Terrestrial Electricity and Magnetism.—Elementary notions as to the indications and effects of terrestrial electricity and magnetism. Thunderstorm; aurora; the mariner's compass.

The movements of the earth and their results.—Methods of measuring angular space and time. Proofs of rotation and revolution. The earth's orbit. The plane of the ecliptic and plane of the equator. Effects of rotation and revolution. The distribution of light and heat on the earth's surface. Day and night. The year. The Seasons.

The climate and other physical features of India.

PAPER IN PHYSIOGRAPHY SET AT THE F.A. EXAMINATION IN DECEMBER 1895.

I. Name the chief forms in which calcium carbonate is found in the earth's crust, and give some idea of the important part which this compound plays in the formation of rocks.

II. What are metamorphic rocks? Name and describe three of the most important examples of these.

III. What is soil? What are its most common constituents? Say how you would examine a soil for the presence of organic matter.

IV. State what is remarkable about the distribution of volcanoes over the earth's surface. Give any recognised theory of volcanic action.

V. What is the gulf stream? How is it caused, and what are its chief effects?

VI. Define Isobars and Isotherms. Explain how and why the average height of the barometer, and the mean temperature, vary with the height of a place above sea-level.

VII. State the principal causes that determine the climate of a country. Give some examples.

VIII. Explain why the length of the day throughout the year varies much more in London than in Madras.

PAPER IN PHYSIOGRAPHY SET AT THE F.A. EXAMINATION IN DECEMBER 1896.

I. The weight of a body is slightly different at different places on the earth. Describe how these slight differences in weight may be detected, and account for them.

II. Describe the various forms in which silica is found in the earth's crust. Name some of the chief minerals in which silica occurs in combination with other oxides, and give their composition.

III. What is coral? Distinguish between the different forms of reefs. What is their value as evidence of the subsidence of the ocean bed?

IV. Describe and account for the general distribution of temperature in the open sea. Point out, and explain anything abnormal in the temperature of (i) the Mediterranean Sea, (ii) the Arctic Ocean.

V. Give a general description of the bed of the ocean, as regards its configuration and composition at various depths.

VI. Give some account of the action of ice as an agent of denudation and transportation.

VII. Describe the distribution of atmospheric pressure over Central Asia, India and the Indian Ocean. Give some account of the causes and consequences of this distribution.

VIII. Briefly explain the following:—basalt, gneiss, stalactite, fumarole, artesian well, vernal equinox.

IX. Indicate methods of determining at any particular place the following:—the meridian, the latitude, the longitude, the local time and the length of a day.

PAPERS IN PHYSIOGRAPHY SET AT THE INTERMEDIATE EXAMINATION IN SCIENCE, ART, AND INDUSTRIES.

I.

(1) What do you understand by (*a*) a spring, and (*b*) an Artesian well? Explain your answer with the aid of diagrams.

(2) State briefly what you know of (*a*) Calcareous waters, (*b*) The Gulf Stream, (*c*) Trade Winds, (*d*) Water-sheds.

(3) Explain fully with the aid of diagrams, the causes of (*a*) Day and Night, (*b*) The seasons of the year.

(4) Describe a simple experiment by which you can show the presence of watery vapour in the air.

Whence is this watery vapour derived, and under what conditions does its amount vary?

Describe any instrument which enables you to measure the humidity of the air.

(5) Construct a weather chart showing the distribution of atmospheric pressure over the Bay of Bengal and the East Coast of India during a hypothetical storm, with the depression passing over Cocoanada, showing also the direction of the wind and indicating its strength by the relative position of the Isobars; and give a full explanatory description of the same.

(6) Give a brief account of what has been learnt regarding the sun from observations of its spots.

(7) In what respect does the solar spectrum differ from the spectrum of an ordinary coal gas flame. Explain briefly how we know anything of the chemical constitution of the sun from observations of its spectrum and that of terrestrial elements.

II.

(1) Explain the terms—zenith, nadir, horizon, meridian and pole. How can it be proved that the earth is round?

(2) What is meant by Mercator's Projection? Point out its chief advantages and disadvantages.

(3) What is the normal composition of the atmosphere? How would you test for the several constituents?

(4) What is wind, and to what is it mainly due? How can the barometer be used for foretelling changes in the weather?

(5) What are the tides, and how are they caused? Explain the variations in height in different places and at different times.

(6) Trace the history of a quantity of water which leaves the ocean as vapour and returns to it by a river.

(7) Write brief notes on the following:—watersheds, glaciers, river deltas, lakes.

(8) How would you distinguish between sedimentary and igneous rocks? By what means can the geological age of any formation be estimated?

(9) Contrast the climates of London and Madras, pointing out the causes of the chief differences.

III.

(1) How do you account for the fact that the weight of a body is not the same at all points on the earth's surface? How is this variation in weight determined?

(2.) Describe the construction of the mariner's compass and how it enables one to travel in a particular direction without the aid of astronomical or land-marks.

If one were to travel in any direction, say S. E. over the surface of the earth by the aid of the compass alone, would the path followed cut all meridian lines at the same angle? If not, give the reason.

(3) What is meant by the "dew point"? How does its position with reference to the temperature of the air affect (1) the amount of aqueous vapour in the air, (2) the hygrometic state of the air.

A mass of moist air is caused to ascend in the atmosphere. Explain what will happen and account for it.

(4) Explain the peculiar features of a cyclonic storm and the causes which give rise to it.

(5) What are the chief causes that determine the climate of a place? Illustrate your answer by examples.

(6) What is the difference between a wave and a current?

Give a brief sketch of the more prominent ocean-currents, their causes, the way they are modified by land distribution and their effect on ocean temperature.

(7) Give any evidence which tends to show that parts of the earth's crust are undergoing slow movements. What is the cause of these movements?

(8) Describe briefly the distribution of the higher animals over the earth's surface, and give a full account of some of the animals peculiar to (1) Australia, (2) South America.

IV.

(1) Explain fully how the pendulum can be made use of to measure the force of gravity. What inference can be drawn as regards the shape of the earth from the fact that this force varies from the Equator to the Poles.

(2) Distinguish between sidereal and solar day, and explain the cause of the difference.

(3) What are tides and how are they caused?

(4) What is a 'glacier'? Mention some well-known existing glaciers. What evidences does a 'glacier' leave behind it to testify to its former existence.

(5) Write short notes on the following. (1) The Gulf Stream, (2) Cañons, (3) Geysers, (4) Raised beaches, (5) Atolls.

(6) Explain the terms, giving examples of (1) Aqueous rocks, (2) Igneous rocks.

How do the two differ in structure? How is the relative age of different kinds of aqueous rocks fixed?

(7) Describe the nature of a cloud. Mention the chief varieties of clouds, stating their characteristics. Explain how a cloud acts in diminishing the quantity of dew formed at night.

(8) Mention some of the higher animals which have become extinct in the recent geological period. What evidence is there to show that man existed with such animals?

(9) A large boulder is found resting on the sand on a sea-beach in Ireland. It is of sufficient size to negative the idea of its having been conveyed there by human agency. No boulders exist in the neighbourhood. What inferences would you draw from these facts? Give reasons.

PUBLIC INSTRUCTION IN BURMA DURING 1895-96.

After dealing with the formidable figures, given in the Bombay and Madras Reports for 1895-96, which are noticed in the first article of this journal, it is a relief to turn to the Report on Public Instruction in Burma for the same period. The following modest statistical table exhibits at a glance the educational progress of the 7,627,568 souls, who constitute the population of Upper and Lower Burma.

	1894-95.		1895-96.	
PUBLIC INSTITUTIONS.	*Institutions.*	*Pupils.*	*Institutions.*	*Pupils.*
Arts Colleges	2	71	2	72
High Schools (English) ...	13	4.413	14	4,404
Middle Schools (English)	49	4,375	50	4,416
Middle Schools (Vernacular)	107	6,774	150	9,790
Primary Schools ...	4,162	109,428	4,453	116,225
Special Schools	35	961	39	1,014
Female Schools	165	6,701	185	7,458
Total ...	4,533	132,723	4,893	143,379

PRIVATE INSTITUTIONS.	1894-95. Instns.	Pupils.	1895-96. Instns.	Pupils.
Elementary, teaching a vernacular only or mainly	10,269	107,660	10,535	105,304
Other schools not conforming to departmental standards, for religious instruction only ...	282	4,351	304	4,946
Total ...	10,551	112,011	10,839	110,250
Grand total ...	15,084	244,734	15,732	253,629

The Rangoon College and the Baptist Mission College at Rangoon had 72 students under instruction (Europeans and Eurasians 14, Native Christians 4, Hindus 3, Muhammadans 4, Buddhists 42, and others 5) and their University successes are on the same unassuming scale, for the first-named institution passed 5 students for the B.A. and 17 for the F.A. of the Calcutta University, while the Baptist Mission College had to rest content with one pass for the F.A. The above is apparently the result from an expenditure of Rs. 71,228 (Provincial revenue Rs. 51,830, Fees Rs. 3,898, other sources, Rs. 15,500). No wonder the Chief Commissioner is not satisfied! He goes on to remark "Up to the present no University candidate from Burma has taken the "A." course of the Calcutta University, although extra expenditure has been incurred in order to provide lectures on the subjects prescribed for this course." Are we to understand that the lecturers on the "A." course subjects had no students attending their lectures or that the students, who attended, did not feel sufficiently fortified by the lectures to face the "A." course examiners? The Educational Syndicate has been asked whether this expenditure should be discontinued. The attention of the Syndicate is also invited to the falling off in the number of candidates at the University examinations. The Law class, attached to the Rangoon College, had only 11 students on the rolls with an average attendance of 8. The Chief Commissioner remarks that "unless marked improvement is soon apparent in the attendance at the lectures, the question of withdrawing the Government grant in support of the Law classes will have to be considered." The Syndicate has been asked to consider "whether the Law lecturer should not be remunerated according to the attendance at the lectures rather than by a fixed salary, as at present." Should the former alternative be adopted, we shall not be envious of the Law lecturer's emoluments.

Upper and Lower Secondary schools have
much ... The large increase in the number of Middle
...ools and of their pupils is gratifying to the
Commissioner and the Educational Department is enjoined ... the Chief
the tendency to obtain Secondary education through ... to foster
... Vernacular. The classification of scholars attending the medium
of the ... ols is as follows :— ...
ary schoo... ...ding Second-

Europeans and Eurasians	1,993
Native Christians	3,498
Hindus	696
Muhammadans	883
Buddhists	13,675
Others	65
	20,810

70 ... students passed the Entrance Examination of the Calcutta University and 350 students the Provincial ... for ... examination, the corresponding figures ... 65... and 469 respectively. The Director ... ... the Seventh Standard examination was due to the transfer of the conduct of the previous year being from the Education Syndicate to the Department explains this decrease in the number of passes at the Provincial Seventh Standard examination. The Chief Commissioner accepts this explanation, but, as it appears, remarks "it is a pity that school-managers were not ... of the examination." given sufficient notice of the change of the conditions ... The total expenditure on Secondary education was Rs. 5,88,840, which was met as follows:—Provincial Revenues, Rs. 93,959; Local Funds, Rs. 17,406; Municipal Funds, Rs. 96,079; Fees, Rs. 2,09,765; other sources, Rs. 1,71,631.

The progress of Primary education in Burma appears to be satisfactory and this remark applies with greater force to Upper than to Lower Burma. The large majority of scholars were naturally Buddhists. The total expenditure on Primary education was Rs. 2,36,734, made up as follows :—Provincial Revenue, Rs. 45,887; Local Funds, Rs. 1,09,914; Municipal Funds, Rs. 48,334; Fees, Rs. 17,162; Other sources, Rs. 15,437.

There were 6 normal institutions with 205 pupils at work during the year against 5 with 188 pupils during the previous year. The results of the examinations were disappointing. The perusal of the portion of the report referring to Special schools

does not give us the impression that Technical educa[illegible]n is on
satisfactory footing. [illegible] any

As r[illegible]egards the education of special classes there is not
to say. [illegible] European schools showed a satisfactory improvement in
their exam[illegible]nation results. Karen education made good progress
Apparently the [illegible] Karens are believers in female education, for 36 [illegible] per
cent. of pupils [illegible] in their scho[illegible] [illegible]irls, the correspondi[illegible]g figure
in Burmese scho[illegible] [illegible] The special schools for [illegible] Muhamma-
dans were not in [illegible]ols being [illegible]ing condition.

There were 41 h[illegible] [illegible] hostels or boarding houses fo[illegible]r male students,
accommodating 2[illegible],246 boarders and 19 for girls accommodating
747 boarders.

It is not en[illegible]couraging to hear the Director deploring the
necessity of reduc[illegible]ing results [illegible] actually earned under the
rules but managers c[illegible]an [illegible] [illegible]hat the Chief [illegible]elves for the loss of their
grants by the thought [illegible]f Commissioner condoles with
them.

[illegible] on education was Rs. 13,43,917, of
exp[illegible] [illegible]nditure accounted for Rs. 10,02,010 and indirect
Rs. 5,31,164. Rs. 3,41,907. Provincial Revenues contributed

The report expendit[illegible]
surprising ther[illegible] occupies no less than 100 folio pages and it is not
for the condens[illegible] [illegible]efore that the Chief Commissioner hints at a desire
[illegible]ation of future reports.

The review of the report concludes thus:—"Mr. Pope con-
tinued to hold [illegible] the office of Director of Public Instruction through-
out the year [illegible], and administered the Department in both Upper and
Lower Bur[illegible]ma with his usual zeal and ability."

ALLAHABAD UNIVERSITY IN 1896.

The Convocation of the Allahabad University was held on the 2nd instant, in the hall of the Muir Central College. The Chancellor, *viz.*. the Lieut.-Governor, was unavoidably absent, being engaged in famine touring, so the Vice-Chancellor, Mr. Conlan, delivered the address.

The past year [1896] was a fairly prosperous one with the Allahabad University. At the School Final Examination there were 239

candidates, of whom 110 were successful. For the Entrance Examination there were 2,324 candidates with 690 passes. During the past year the Senate decided that no candidate can appear for this examination, unless he has attended 75 per cent. of his school meetings during the preceding year. This change, it is expected, may have the effect of reducing the number of candidates.

For the Intermediate Examination in Arts there were 736 candidates of whom 310 passed. Of these 473 candidates entered for the A. Course and 263 for the B. Course—184 of the former and 126 of the later having been successful. For the B.A. Examination there were 300 candidates with 146 successes. 215 entered for the A. Course with 103 passes, and 85 for the B. Course with 43 passes. For the M.A. Degree there were 39 examinees and 22 passes.

For the Bachelor of Laws Examination there were 211 candidates, 44 of whom passed, 2 being placed in the first class.

With regard to the castes of the candidates, the proportions of Muhammadans to Hindus were 10 per cent. at the School Final Examination; 21 per cent. at the Entrance; 19 per cent. at the Intermediate; 21 per cent. at the B.A. and 20 per cent. at the M.A.

During the year under review, in the Faculty of Science the Muir Central College, Allahabad, was affiliated up to the D.Sc. standard; while Queen's College, Benares, the Agra and Canning Colleges and Jubbulpore Government College were affiliated to the B. Sc. Standard. In the Faculty of Law, amended Regulations were passed raising the percentage of pass marks, and requiring candidates in and after 1899 to pass the B.A. or B.Sc. Examination before commencing the two years' Legal Curriculum. The Allahabad High Court however has promulgated a rule to the effect that every student before joining a Law Class must take his Degree in English literature up to a given standard and not in the Science course only; otherwise he will not be eligible for enrolment as a legal practitioner. The object of this rule was to ensure Bachelors of Law attaining a certain knowledge of English, for hitherto it has been found that legal graduates of the Allahabad University exhibited lamentable ignorance of the English language while pleading be[illegible] Courts of Justice of the North-West Provinces.

As a special feature it should be mentioned that there were no cases of illicit practices at the University Examinations brought to light during the past year.

The Vice-Chancellor's Address was scarcely of an encouraging character. Briefly speaking, he remarked that young men in the N.-W. P. simply sought University honours as a means of obtaining employ-

ment in the Government service, or of practising the legal profession. Learning for its own sake was not followed. He admitted that a poor man with a large circle of relatives depending on him must be expected to take the shortest cut to obtaining the best livelihood he could command ; nevertheless, the Vice-Chancellor maintained that in other countries there were instances of men who were struggling against poverty and had yet devoted themselves to learning, exclusively for its own sake. Such cases were unknown in India, and for several years to come " English education will be treated as a marketable commodity to be invested in the purchase of a Government appointment." The only method of remedying this state of affairs, the speaker continued, would be the establishment of a system of endowments, which would encourage men to devote themselves to learning simply for learning's sake.

In alluding to the rule made by the Allahabad High Court that candidates should pass in English literature up to a certain standard, the Vice-Chancellor feared that it would have the effect of driving students from the study of Science ; for while the University had prescribed the B.A. or B.Sc. degree as the preliminary to commencing the legal curriculum, the High Court had declared that it would not accept the B. Sc. as sufficient for enrolment of Bachelors of Laws to practise before the courts. This rule, he admitted however, was necessary, for native legal practitioners had shewn a ridiculous lack of the English knowledge, and it was imperative that a lawyer should know English well. In conclusion the speaker made some remarks about the good effects of physical training which was being conducted under the auspices of the University and acknowledged the services in this direction of the Muhammadan Anglo-Oriental College at Aligarh and especially of its accomplished Principal, Mr. Beck.

THE CALCUTTA UNIVERSITY CONVOCATION ADDRESS.

The following is the address delivered by Justice Trevelyan, Vice-Chancellor, at the convocation of the Calcutta University, h[illegible] 20th February 1897.

Your Excellency, Members of the Senate, and Graduates of the Calcutta University,—In obeying your Excellency's command to address the Convocation, I must commence by expressing the great satisfaction which your Excellency's presence is giving to all of us here to-day. The interest, which, since the assumption of your high office, you have

shown in the affairs of this Univerity, demands our most respectful acknowledgment.

In this annual address, the Vice-Chancellor has to tell the story of losses sustained by the University during the past year. This must always be a melancholy task and this year it is as sad as ever.

Who of us when we met last year could have thought that so soon we were to lose Manomohun Ghose? Besides that most of us have to mourn a personal friend. We also realize what this University and this Province have suffered by his death. For twelve years he had been a member of our Senate and in the Law Faculty especially his experience and judgment were of great value. He had not, however, up to the time of his death, opportunity for doing for us work so remarkable and so eminently useful as was done by him outside the walls of the University for his fellow-countrymen in this Province.

Manomohun Ghose was the first Bengali who regularly practised in the Courts of Bengal as a member of the English Bar and thus led the way to many of his countrymen, who followed in his foot-steps and have brought the traditions of a great profession to the aid of the administration of justice in this country. One of the proudest boasts of the rulers of this country is that they have given to their fellow Indian countrymen justice as pure and as impartial as is to be found in any portion of the world. The main factor in the good administration of this justice must be the independence of the Bar. That independence was throughout his career successfully asserted by Manomohun Ghose and from his example the lesson has reached this country that freedom of speech tempered by proper regard for the authority of the Court ensures the admiration and respect of judges and the public alike. This was one of the aspects of Mr. Ghose's career, but the work for which he will be best remembered is that to which he devoted many of the later years of his life, the best of his great ability, and unflagging zeal. It is a matter of supreme regret that death has stilled the tongue and paralyzed the pen, which were best able to set forth the merits of one side of a controversy, the fair consideration of which is of the utmost importance to the administration of justice in this country. It will be long before the work done in this behalf by Mr. Ghose will ha[illegible] the grateful recollection of his countrymen.

[illegible] has been another instance of one of us being snatched away in the prime of his vigour and long before his powers of doing good were exhausted: Dr. McConnell was at the time of his death Professor of Materia Medica and Clinical Medicine in the Calcutta Medical College and Second Physician of the Hospital. His skill in medicine had gained for him the leading consulting practice in this City and as a pathologist

and diagnostician he was without a rival. As a teacher of medicine, he had a very high reputation and the attention which he devoted to his lectures secured for him the esteem and confidence of his pupils. He was a constant attendant at our meetings and took an active share in the debates both of the Senate and of the Medical Faculty of which he was for two years the President.

In common with the Mahomedan community, this University has this year to mourn the death of three distinguished Mahomedan Fellows: Nawab Ashgar Ali, C.S.I., Prince Mahomed Furruk Shah of the Mysore Family, and Prince Sir Jehan Kadir, K C.I.E. Nawab Ashgar Ali had been called to the English Bar, and at one time served the high office of Sheriff of Calcutta. Prince Furruk Shah was well known to most of us. Although he took little part in the proceedings of the University, he did useful public work as Sheriff of Calcutta and as a member of the Bengal Legislative Council, and he was president of the Central National Mahomedan Association from the date of its establishment. Prince Sir Jehan Kadir at the time of his death occupied a very prominent position in Calcutta. His amiable disposition endeared him to all who knew him. His chief public work was as a member of the Supreme Legislative Council, and as President of the Mahomedan Literary Society, but among his own community he was also well known as an Arabic and Persian scholar. Rajah Luchman Sing, who lately died, was also a member of our Senate. At the time of the Sepoy Mutiny, he was a brave and faithful servant of the British Government, and after its suppression, until the time of his death, when he was Vice-Chairman of the Agra Municipality, he continued in the service of the public. He did valuable work as a translator of several books from Sanskrit into Hindi.

We have also lost by their retirement from this country, three of our Fellows, the late Chief Justice Sir Comer Petheram, Mr. Justice Pigot, and Mr. Griffiths. The two former served the office of Vice-Chancellor. Mr. Griffiths was best known to us here as Registrar of the University for five years, and all who were associated with him must recognise that he never spared himself in the faithful discharge of his duties. A mathematician of high attainments, he filled with conspicuous success the important posts of Principal of the Hughly and Presidency Colleges. His treatment of his pupils was marked by a just combination of firmness and kindness, and he spared no pains to instil into them the principles of industry and accuracy, by which he had himself been consistently guided throughout a long and useful career.

I have done with the tale of our losses and can proceed to a happier subject. There is nothing in the events of this past year worthy of any permanent chronicle in the history of this University, but good work

has been done and the steady progress that this University has made since its foundation just 40 years ago has been maintained. It will not be out of place now to look back for a moment upon the work which we have been doing these many years. Twenty-two years ago, when Mr. Hobhouse, the then Vice-Chancellor, was presenting His Royal Highness the Prince of Wales to Lord Northbrook, the then Chancellor, for an honorary Degree, he spoke of the good work which up to then had been done, and said, " It is certain that our founders have given to the people of India an instrument which they want and are determined to use. That it is being used and will continue to be used for good I, for one, do not doubt. " Again he said : " If the past ratio of progress be continued His Royal Highness may, at the end of another 20 years, find himself a member of the largest University of the world and one of the most influential on the people on whom it works. " I claim to-day that that prophecy has been fulfilled in substance. Although by itself this University cannot claim to be the largest in the world, still if we add to the numbers in our own list the numbers of those who enter the Universities of the Punjab and of the North-Western Provinces which are the offsprings of this University, we find that to-day the annual number of candidates seeking admission at the doors of learning in the Provinces which twenty years ago were governed by the Calcutta University amount to something like 10,000—a number probably not exceeded in any University in the world. This is but a small indication of the progress that has been made. This instrument of education has been used more and more and in a better way by the people of this Province. In spite of the many bars which a desire for improvement in the quality of candidates for University honors has placed in its way, the flood of candidates has rushed on with increasing force. The first attempt to improve the quality of candidates was when we required the Head Masters to certify that the candidates had a reasonable chance of passing. Next, the system of recognizing particular schools was brought into force. This, of necessity, materially improved the education of the scholars. The next move was to insist upon test examinations, and lastly to improve further the quality of the schools which feed our colleges. We provided that schools which had not passed 20 per cent of the candidates sent up, were to be warned and that if a school failed to pass 20 per cent. for three years its recognition should be withdrawn. In spite of these restrictions the number of candidates appearing for the Entrance examination in 1897 was 5,924, a number exceeded only in two previous years, those years being before the restriction I have alluded to were imposed.

It is not only upon the larger number and upon the improved attainments of those seeking to enter this University that we have to pride ourselves. Whereas twenty years ago only about one in four of those who passed the Entrance examination completed their course, that is, went up for the degree of B.A., we find now that roughly speaking, about 50 per cent. complete their course. This shews an appreciation by the students of their college work after they have commenced it and understand what it means. To proceed further, although the examination for the degree of M.A. has been made much more difficult, whatever may be the case with other examinations, the number of those taking that degree has been more than trebled. These facts, if they show anything, show unmistakably that the verdict of the public has been given in favour of our work, and whatever attacks may be made upon our system we can claim that it has won the approbation of those for whom this University was created and of those most capable of appreciating its benefit.

We may now expect that our system of college education will present further attractions, as what has been for a long time a grievous reproach to it has now been removed. Until lately students were unprovided with decent accommodation of any kind. Many parents may well have hesitated before allowing their boys to embark upon a college career at the risk of injury to their health and with the further grave risks of moral contamination to which the life of a young man in a large city is exposed. It is impossible to exaggerate the mischief which must have been done to the health of many young men by the discomforts and worse evils of lodgings in which they were forced to reside. There are now throughout the Province a large number of hostels and boarding houses in which students are provided with clean and decent lodging, can obtain good food, and what is of the utmost importance in some cases are subjected to a certain amount of moral discipline. The last report of the Director of Public Instruction shows that there are 166 hostels or boarding houses for boys and girls with 4,757 inmates; of these 25 are managed by Government, 16 are aided by Government and 125 are unaided. Close by this building we have the Eden Hindu Hostel which I have lately had the advantage of inspecting. I am bound to say that it appears to me to be in every respect suitable for its purpose. The rooms occupied by the young men sometimes singly, sometimes in batches of two to four are as clean, airy and wholesome as can be. In the quadrangle of the hostel there is a piece of ground large enough for games such as foot-ball. In my opinion, very wisely the authorities are doing all they can to compel all Hindu students of the Presidency College and of the Hindu

and Hare Schools, who are residing in Calcutta, and not with their parents or guardians to reside n this hostel. A boarding-house has also been erected for the students of the Calcutta Madrassa and there are others in this city such as those attached to the Oxford Mission and to the General Assembly's Institution. I can only hope that in a very short time we shall find in every town in which colleges are situated, good and well-managed hostels in which all students, not living with their parents or guardians, will be compelled to reside. I have also a word to say in passing to commend the patriotic efforts of those who have interested themselves in promoting the physical well-being of Bengali students by games and other exercises.

So much for the progress which we have made. If I, like my eminent predecessor in this chair, were to attempt to prophesy what would be done during the next 10 years in this University, I would foresee besides increased comfort in the accommodation of students, means of training for their bodies in a measure similar to those adopted in English schools, but with alterations necessitated by differences of climate and of race. I would also foretell increase of technical education in every direction, more opportunities of improvement for the artisan in his workshop, for the student in his college, and for the man of science in his laboratory. Our colleges and our schools are deficient in apparatus for scientific demonstration and experiment which are of infinitely greater value than the mere book learning to which we are now confined. Perhaps, the day may be not far distant when we may see in this city an institution annexed to this University as useful to science as the Davy-Faraday Research Laboratory, which has just been opened in London.

Before bringing the proceedings of the day to a close, I must offer some words of friendly counsel to you, whose University career has been terminated by the degrees bestowed upon you to-day. This is the end of your student-life, but barely the commencement of your education. What you have learnt at the University prepares you to receive the many lessons which every day of your lives must teach you. To what extent you will reap the benefit of the education which has been afforded you must depend alone upon your own exertions and upon the use to which you put that education. You are going out into life with all that we can give you. You have the honor of this University in your trust. I can only hope you will one and all be worthy of the trust which has been confided to you. Most of you, I have no doubt, will become enrolled in the ranks of the learned professions. You will be lawyers, doctors, engineers, or teachers.

The first duty of a man entering into a profession is to put himself into the most absolute subjection to the rules which have been framed for his profession by those who have entered it before him. Until years of experience have brought greater knowledge, he must treat such rules as having been made by those who are abler and wiser than himself; he must accept them without question and he must follow them with loyalty. As time goes on, those rules may have to be changed, and you yourselves may have to be parties to the reconsideration of them, but at the commencement of your career you must take it as an axiom that every rule made by a profession for its guidance and for the conduct of its work has been made for the benefit of the society of which that profession is the servant. To some extent those rules have been framed for reducing the ranks or excluding unworthy members of the profession. You may at first, perhaps, feel galled by the restraints which a rule may place upon your action and may consider that it unfairly hampers free competition, but any rule which tends to raise the level of a profession must operate for the benefit of the members of that profession. You will not find yourselves the losers by a strict adherence to professional rules and etiquette, as thereby you will acquire the esteem of your own profession and the esteem and patronage of the public also. It is absolutely true that a professional man who is repudiated by his own profession must, in the end, be disregarded by others and can obtain little real success.

I next ask you to remember that whatever your profession may be you cannot expect to raise yourselves in it without both integrity and industry. Integrity and industry in the end—to use perhaps a mean expression—pay better even than ability and opportunity. Great names in all the professions are those of men who have avoided all temptations to stray from the path of honesty and who have never considered that their time for learning was at an end. The clever men who start in life with the support of rank and wealth are frequently distanced in competition by those who have begun life with less advantages. How many of those who have become distinguished in medicine, in science, in law, and in every department of learning are men who started equipped only with the determination to succeed by honesty and hard work. It is impossible to recall to mind a case of real success in a professional career, where industry and integrity have not been continually present.

I have a word more to say to those who are entering upon my own profession. All that I have already said with regard to professions applies with equal, if not greater, force to the legal profession. A lawyer has probably more opportunities for good and for evil than any other member of the community. An honest lawyer is true and just in

all his dealings. He who aids his client's cause with skill and knowledge honestly used, who, while upholding the rights entrusted to him only promotes litigation, where it is absolutely necessary, will always maintain the respect of his fellows. A man who foments litigation for his own gain is a curse to any society. It is, it is true, not for the advocate to judge of the merits of a suitor's cause; that is the province of the Judge. But it is not the duty of the lawyer to espouse the cause of one who seeks to perpetrate wrong through some chance advantage the law may happen to afford him. In the words of a great lawyer and Judge:

"To virtue and her friends a friend,
Still may my voice the weak defend.
Ne'er may my prostituted tongue
Protect the oppressor in his wrong,
Nor wrest the spirit of the laws
To sanctify the villain's cause."

THE INTELLECTUAL PROGRESS OF THE LAST FIFTY YEARS.*

It is a well known fact that a body, to be sound, should develop itself in all directions. This rule holds good in every case. The Bharatavarsha or India is reputed to have been sound some centuries ago. Then she was the mistress of the world, intellectually, physically, morally, and above all, religiously; she used to be looked up to for instructions by the rest of the world. She went on developing till she reached her meridian and her decline thenceforward was only the result of the laws of nature. Her religion became impure, her morals vitiated, her martial power declined and her intellect deteriorated. The consequence was she became a prey to stronger nations, and to protect herself from their ravages she became *clever*, ceasing to be *good*. Her bright intellect, which used to be an object of envy of her neighbours, still maintained its superiority, though to some extent it degenerated into cunning. Yet intellectual giants such as Kalidas, Shankar Acharya Ramanooj Acharya, and others flourished and astonished the world. As her other organs had been also diseased, her intellect alone was found insufficient to revive her glory and make her the sound and independent nation she once was. After having suffered from internal wars and devastations, India came under the sway of Mohamedan rulers. Though

* An address delivered by Dewan Bahadur R. Rughunatha Rao at the second Anniversary Meeting of the Madras University Union.

rapacious to a degree, they did not disintegrate the country by destroying its social and political institutions, and in the reign of Akbar the Great, and some others, attempts were made to direct the national intellect into its proper course. The immemorial mode of national education and its village and revenue systems were not interfered with. Though Persian was the State language, the vernaculars were not allowed to be superseded by it. The result was that, though the country was in the hands of foreigners, many a poet, scientist, grammarian, astronomer, astrologer and even politician, from among the people of the soil, flourished in India during the Mohamedan period. Yet the development was not all round, and the nation did not become sound. In the last century, some European nations and Christian Governments fought hard to acquire supremacy in India. At the beginning of the current century the British struck root and established themselves as the rulers of India. It took a century for the British to establish themselves crushing other European competition and subduing the Mohamedan power. When the British firmly established themselves, they found leisure to look into internal affairs and took up the question of the education of the people. A battle was then fought as to what sort of education could be advantageously imparted to the people and whether the instruction to be given should include Religion. Those who held that instruction should be secular only and imparted in the English language won the battle. This rule thenceforward became the watchword of the Department of Public Instruction. We now see and feel its results. About 10 per cent. of the population has had the advantage of this education, and I read in one of the published reports that 90 per cent. of the population is still illiterate. Of the 10 per cent. aforesaid, a small portion know the English language and some of the sciences of the West; of these only a few have become graduates of our University. This small section of the people consists of three classes, *viz.*, men of substance, men possessing some means of livelihood and those not belonging to either of the two classes.

The number of graduates who are men of substance is indeed very very small. The second class consists of more numerous persons, yet their strength is very small and the large majority of the graduates come under the last class. To these, the first consideration is how to keep their body and soul together. They are thus compelled to seek some service where their knowledge of the English language may be useful in securing a means of livelihood. They are thus compelled to unlearn a good deal of what they have learnt, and they end their lives without contributing much, if at all, to the public weal.

The existing system of education has suppressed the national arithmetic and its system of accounts. Its arithmetic was much superior to what is taught in the English schools. Without a slate and pencil, without the knowledge of vulgar fractions it enabled and still enables people to cast accounts in an admirable manner. It is the knowledge of this arithmetic which was the primary cause of the rise of our respected Sir T. Muthusamy Iyer. He was an assistant to a village accountant whom he always accompanied whenever he had to explain village accounts to superior revenue officers. On one occasion he so astonished a Tahsildar with his proficiency in the art that he at once took into his head to give him English education. He patronised him and gave us in him a great lawyer. Even our women excelled in mental arithmetic. I have an elder sister who kept all the accounts of my father's household, which were not small, without knowing how to read or write. Your experiences, I have no doubt, will recall to your minds many such Hindu ladies. Our boys now cannot work any simple sum without the aid of slate and pencil. This ancient art of ours deserves to be encouraged. Boys used to get by heart a body of tables while mere children and their memory enabled them to become very good and quick accountants.

The present system of education has neglected also the vernaculars. This has produced dire consequences. Many of our eminent English scholars cannot read and much less write their own vernacular. Many cannot even talk it well. They find great difficulty in corresponding with their parents, when the latter happen to be ignorant of the English tongue. It must however, be admitted that the Educational Department has tried to remove this defect, but it has not yet succeeded in doing so. The examination in the vernaculars has not been what it ought. A graduate of our University, who for some time was at the head of the Judicial Department in Gwaliar, told me how he passed in Tamil and how he forgot every thing of Tamil within a short time after passing the examination. He was with me when he was preparing for his B.A. examination. He used to read the Tamil Ramayanam and get portions of it by heart. Some time after he became a full-blown B. A., I had occasion to put a Tamil paper into his hands and wanted to know what it was about. He laughed and told me that he had forgotten all his Tamil and could not make out the contents of the paper. Seeing that I was about to upbraid him for his neglect, he at once told me that he was not a solitary instance but one of a numerous class of such students. My experience of our educated men goes a good deal to confirm his statement. Some well-informed persons are of opinion that this disregard of the verna-

culars has made people think in a foreign language and became imitative and not original. I think a system of sound education should insist upon a boy possessing some knowledge of his own vernacular before he is allowed to enter an English school. My own idea is that before he can become a student of the English language a Hindu should to a certain extent have studied first the own vernacular, secondly the vernacular of the country in which he lives and lastly Sanskrit in which his religion is explained.

The present system of education has not striven to maintain the morality of the people and to improve it. About 50 years ago, many were under the conviction that honesty was the best policy. Transactions involving valuable considerations used to be evidenced by writing of third parties, calling upon the sun and moon, or God to witness them. Such bonds were more efficacious than those now duly executed on Government stamped paper and registered under the provisions of many a statute. Non-acknowledgment of a debt, when due, used to be considered as dishonorable and unworthy of a man. If the debt were one contracted by the parents, it used to be viewed as dishonorable not to acknowledge and pay it even in cases in which the law of the land would not make a man pay it. The parents, the instructors, the pious, the learned, and even the aged, used to be considered entitled to respect. All this has now ceased to exist. Non-English-knowing parents are generally looked upon with indifference; instructors have been placed under the constant fear of criminal prosecutions; the pious are looked upon as superstitious people; and the old are viewed as fools. Gratitude and hospitality have been drowned in selfishness. Utilitarian philosophy is everywhere in the ascendent. Policy has supplanted duty. In short, man has been dethroned and made a lesser animal. To make his degradation complete, he has been induced to believe that there is no supreme conscious Ruler of the Universe and that the word Sin is a meaningless term. A belief in the existence of God, who is all-seeing and omnipresent, all powerful and an impartial judge, a loving father and an all merciful sovereign, is absolutely necessary not only for the final and eternal world to come but also for this ephemeral world. There has been no record of the existence of a nation or people who have not had a Head, known under some designation or other. Why so? Because it has been found from sad experience that the public weal cannot be secured without such a being. At times his powers and capacity were found not sufficient in emergencies, and greater personages were sought after at such times. Often such men even failed. I was then found necessary to invoke the aid of One who should be the

greatest of all, wisest of all, omnipotent, omniscient, omnipresent, whose impartiality, justice, wisdom, and clemency should be supreme. Such a person is God and a belief in His existence secures the greatest happiness of the largest number, if not of all. Such a belief curbs vice and encourages virtue. It is said that some of the greatest politicians found the necessity for the spread of such a belief for the temporal good of this world. By placing a misconstruction upon the phrase neutrality of religion, God has been formally divorced from the Educational Department. I say misconstruction, because my construction of the phrase is non-interference with one's religion, that is, allowing each person to entertain a belief in the existence of God in his own manner whether it be approved of or not by another. If this construction be correct, the course to adopt would be to instruct the student to maintain this belief in the manner in which his parents maintain it. One manner may be better than another, but the student should be taught to believe it in some manner or other, leaving him to choose the best when he may be competent to make a good and correct selection. Instead of so instructing him, he has been deprived of all religious instruction and he is consequently made to believe in nothing, fearing none but the police, aggrandizing himself by any and all means and thinking always of nothing more than Pounds, Shillings and Pence. It is hoped that a new era will soon dawn.

As it is, a graduate, who leaves the Senate House with his gown and hood on, has no programme for his future life. Many such persons live an empty life and conclude it as a lower animal does. But men of wealth among the graduates are however only a few. Others whose number is legion leave the Senate House with empty stomachs, with a debt due to the owner of the gown which they have worn, no house to go to and no money. The lot of such people is very hard indeed. They must forget their self-respect, and the idea that their mission is to be good and make others good. They must devise some means or other whereby they can get something to live upon, and if honest means fail, others must be had recourse to. We have been flooded with such men and God only knows what will become of them.

Taking things as they are, what is it that we have a right to expect from this 'educated' portion of the population? I have already divided them into upper, middle and lower classes. The number of the upper class can be counted as I have already said on one's fingers. One of such a class should, in grateful remembrance of the University, devote himself to growing two blades of grass where one only grew before, to utilizing the knowledge he has acquired in discovering fresh truths of nature and

he should use all in bettering the condition of his fellow-creatures; he should endeavour to improve agriculture, to develop trade, manufactures, arts, and sciences and to be charitable in proportion to his means. He should, if he can, stand up for the protection of helpless people. I shall not dwell longer on the duties of such men, for their number is indeed very small.

The second class, *viz.*, those who have some means of livelihood, should at first direct their attention to put their houses in order. They should, by honest means only, try to improve their existing resources by the use of knowledge they have gained in their colleges. If one of them is a small landholder, he should try to cultivate his land better, to raise larger crops, to be economical in his household, to be satisfied with the simple food on which his forefathers subsisted, thus becoming himself richer and increasing the riches of the commonwealth. When his means raise him above want, he should think of following his inclination for the improvement of any of the sources of happiness of the country which owns him. If he has a predeliction for trade, for manufacture, for engineering, for medicine he should take that one up and work patiently and diligently, overcome difficulties and eventually by God's blessing effect some good to himself and to his country.

What to do with the other or the third class, it is difficult to decide It is the class which has literally no means of livelihood. It has no capital to invest. It must earn its bread by serving some capitalist. Of the capitalists the Government in India occupies the most prominent position. Yet its sphere is limited though extensive. Its superior branches are manned by foreigners. Though benevolent, it is not and cannot be all for the people of the soil. It is besides ill-informed. It does not understand the people and the people do not understand it. Such a state of things must produce confusion. In trying to be economical, it is at times pennywise and pound foolish. It has of late reduced the number of lower officers and increased that of the higher on the score of improvement. This system has not only considerably reduced the number of berths available for educated people but has also put into the hands of these lower officers considerable power of doing mischief. To appease hunger on one side and resist temptation on the other becomes a very difficult task for them. If any of these poorly paid hirelings falls once, he is gone for ever. He has other woes besides. There are more females than males in the world. In every country the parents' greatest concern is to see their daughters married. This feeling is very keen in India, because the masses believe that no woman should remain unmarried all her life and that it is a sin not to get her married. This

false conviction has become so strong that the baneful system of uniting a woman irrevocably to a man while she is yet a child is rampant in India. Children less than a year old have been so disposed of. This practice in some cases furnishes a student with sufficient means to enable him to continue his studies. When he passes his Matriculation examination he becomes a coveted bridegroom and his would-be mother-in-law begins bargaining to buy him for her daughter. A regular auction is held and he is knocked down to the highest bidding mother-in-law, and becomes a husband according to the false law, now administered in our Law Courts. Before he becomes a B.A., he is often a father. The money obtained before the marriage has all vanished in the purchase of books, &c., and nothing is left out of it. He has to maintain himself, his wife, and his children. His mode of living has, by imitating the people of the West, been considerably changed. To his father, a few annas a day were sufficient to enable him to lead a contented life, but to the son the case is different. He wants Europe boots, a coat, a cap, a walking stick, a bat, a chair, a table, a newspaper, tea, coffee and at times something stronger. These are costly things, yet he cannot do without them. If he fails in his attempt to secure these he is rendered unhappy and discontented and loses his balance and shortens his life.

I would urge upon the poorer classes to take the following into their careful consideration. Students of little or no means ought to be satisfied with the instruction imparted to them until they become entitled to enter special colleges where such arts and sciences as ensure a means of livelihood, are taught. Such are the Medical College, the Engineering College, the Agricultural College, &c. There is now, a greater demand for good doctors, engineers, masons, carpenters, smiths and peasants than for quill-drivers. Manual labour is always respectable and independent. No profession is dishonorable. Agriculture is the most honourable of all. People should give up the wrong idea that quill-driving is the most respected of all professions and should take up a profession for which they have a natural bent.

Until and unless some change for the better is introduced in the system of education on the lines already suggested, education cannot be practically useful and cannot produce happy results. A large number of hungry people, particularly the educated, can never contribute to the strength of Government nor to the happiness of the people.

It is not enough that people should ward off the evils of hunger but they should also be moral. Morality is undoubtedly the consequence of a religious life, despite the theory of a school which holds that morality

is independent of Religion. Religion is now at a discount. Some try to be good without it, some give it up as inconsistent with progress. Others will have nothing to do with it, because it is too difficult to learn and its precepts are too unsuited to worldly concerns. Some have no time to learn its enormous regenerate literature. I shall tell you my conviction. Morality, that is virtuous conduct, is a creature of Religion. Religion is eternal truth not changing with the times. It is easy to learn. It is possible to follow. It enriches its devotee in this world as well as in the next. Its study cannot occupy much time. It can be studied, learnt and digested every day at such times as one must naturally waste. Its literature is summed up in not more than a few lines.

Above all, to become more useful and happy all of us must believe in the existence of God and His Providence. We must believe that he has left His Word to all. His word we must obey. His direction to us that we must always think of and do that which is pleasant and beneficial to others, or in other words, that we should do to others what we would like to be done to ourselves, must be sincerely, strictly, and with pleasure, followed.

In all its aspects the present system of education, seems to me, defective. The system I advocate is :—

(1) that boys and girls should be freely educated by Government up to a particular standard which is absolutely necessary for them to acquire an honest means of livelihood.

(2) that when this standard is reached, the rich should be left to prosecute their studies at their own expense.

(3) that the middle classes should take up a collegiate course of studies, choosing such subjects as would improve their respective means of livelihood.

(4) that the poorer classes should go to those colleges, where what is now called technical education is given, paying very moderate fees.

(5) that from the beginning religious education should be imparted, the religion of the parents being taught to the students.

MADRAS TEACHERS' GUILD.

The annual meeting of the Madras Teachers' Guild was held on Saturday, the 6th instant, at 5 P.M., at the Christian College Hall with Mr. J. H. Stone, the President, in the Chair. There was a fair gathering of members present. After the reading of the Minutes of the pre-

vious meeting, Mr. S. Vasudevachariar, one of the Secretaries, recommended, on behalf of the Council, 23 applications for membership for acceptation. The recommendation was duly seconded and carried. The Rev. F. W. Kellett, then announced that the income of the year amounted to Rs. 638-9-6, and the expenditure to Rs. 472-13-3, leaving a balance of Rs. 165-12-3. It was proposed to retain Rs. 15 as a working balance and to bank Rs. 150. It was also agreed to that Rs. 100 of this sum should be devoted to the Provident Fund for teachers, if it took shape, and Rs. 50 could be put by as a nucleus of the Reserve Fund. Under the rules the accounts of the Guild should be audited by a professional auditor; but they were so small and simple, that the Council, with the best of intentions thought it better to dispense on this occasion with a professional's services. For this the Council wanted the sanction of the Guild which was unanimously given.

Mr. Swami Iyer, of the Teachers' College, then gave notice on behalf of some of the teachers of Saidapet, that at the next meeting, an alteration in the rules would be proposed that members resident at Saidapet be, for the purposes of the Guild, considered as mofussil members.

On the motion of the Rev. J. Cooling, it was resolved to send a letter to the Hon. the Rev. Dr. Miller expressing the sympathy of the members with him during his illness and their regret that his health necessitated his departure to England.

On behalf of the Council the Secretary proposed that a new office be created for the purpose of looking after the Teachers' Registry, which was agreed to.

Mr. Kellett next announced that the Periodicals Committee has been enlarged by the addition of two more members for each Guild room, and their function has been decided to be the management of the Guild rooms, the selection of the periodicals, the management of the library, &c. A grant of Rs. 75 was also sanctioned for the purchase of periodicals.

Mr. Kellett then informed the meeting that a Conference would shortly be held in the office of the Director of Public Instruction in connection with the Grant-in-aid Code, and that amongst others, the Rev. James Cooling, and the Rev. Bauboo had been asked to meet the Director. He thought that these gentlemen could informally represent the Guild and look after the interests of teachers. After some discussion, it was decided that the Council should meet on Wednesday to discuss matters with Messrs. Cooling and Bauboo, both of whom signified their intention of serving the Guild.

It was then announced that the managers of the Buckingham and

the Carnatic Mills had kindly expressed their willingness to receive small parties of members, either on Saturday, the 13th, or on Saturday, the 20th, at 8 A.M. The election of Office-bearers was then proceeded with :—

Mr G.H. Stuart was elected President, in place of Mr. Stone, who has gone home on furlough. Mr. H. S. Duncan was elected in place of Mr. Hall, as Vice-President, the other four Vice-Presidents being re-elected. Messrs. R.S. Lepper and S. Satthianadhan were respectively made Treasurer and Registrar. Messrs. F. W. Kellett and S. Vasudevachariar were re-elected Secretaries. Two new members Messrs. Swami Iyer and Goodrich were put in the Council in place of Messrs. Duncan and Lepper, the other thirteen members being re-elected. This terminated the business part of the proceeding; and the Guild adjourned to the College Hall where a very interesting programme of vocal and instrumental music, recitations, dialogues, &c., was gone through, several ladies and gentlemen taking part in it. The Rev. J. M. Russell, in an interval, expressed the thanks of the Guild to Mr. J. H. Stone, who had so ably filled the office of President, devoting much of his time to the affairs of the Guild. He was sure all present would wish him a pleasant holiday and a safe return. Mr B. Hanumanta Row seconded the motion, to which Mr. J. H. Stone replied in a few appropriate words. The reading of the annual report by Mr. Kellett closed the programme of the day.

MADRAS TEACHERS' GUILD REGISTRY.

Places wanted for

1. A trained certificated F.A., Tamil;
2. An untrained Sanskrit Physics B.A;
3. An F.A. (B.A., Language Branches) with untrained teachers'; certificate, Tamil;
4. A Christian untrained F.A., Tamil;
5. An untrained F.A. (B.A., Tamil) with ordinary certificate; exempted;
6. A Physics B.A., L.T., Tamil;
7. A Mathics Tamil, B.A., L.T;
8. A Matric with First Class Normal Certificate;
9. A B.A., (Philosophy and Tamil) drawing ⅓ grant; Headmaster or College Assistant, Christian;
10. A Sanskrit Biology B.A., L.T., Christian;
11. A Mathics B.A., L.T., Christian;
12. A trained Tamil Matric;

13. A Physics Tamil untrained B.A., Christian;
14. A Sanskrit Chemistry (Tamil) B.A., untrained;
15. A trained certificated Mathics B.A.

All communications regarding the Registry should be addressed to

Mr. S. SATTHIANADHAN,
Royapettah, Madras.

REVIEWS OF EDUCATIONAL PERIODICALS.

The February number of the *Journal of Education* (London) is as usual filled with matter of educational interest. Mr. Kirkman continues his contribution " An experiment in modern Language Teaching. " Considering the methods usually adopted for imparting a knowledge of English to natives and Vernaculars to Europeans, a perusal of the article would be instructive to both teachers and taught. Space is found for the report of a long and interesting interview with Mrs. Brander, Inspectress of Girls' Schools, Madras.

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The *Educational Review* (London) for February contains a large and varied assortment of reading and readable matter and is adorned with two portraits (Mrs. Bryant and Canon Fowler).

* * *

The *School Bulletin* (Syracuse, N.Y.) for January is most profusely illustrated. The reports of conferences, which occupy a prominent position in America's educational life, are full and interesting, and at times diverting.

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We have received the issues of the *Journal of Education* (Boston and Chicago) for January and find them well supplied with readable matter, a great deal of which is of general interest.

* * *

The February number of *The Young India*, which has just been issued, deals with various educational subjects, the chief of which are " Education and Reform " and " The Madras Teachers' Conference. " The former comments on the advantages of English education, and its beneficient results, while the latter is a short review of the recent educational conference held at Madras under the auspices of the Madras Teachers' Guild.

EDUCATIONAL NOTES.

The bust of Dr. Arnold of Rugby was unveild by the Archbishop of Canterbury on the 8th ultimo in the Picture Gallery of Rugby School.

* * *

The new Governor of Mauritius, Sir Charles Bruce, spent a large portion of his life in an educational capacity. In 1863, he was appointed, after a competitive examination in modern languages and Sanskrit, assistant librarian of the British Museum. His subsequent career is as follows:—1865, Professor of Sanskrit, King's College; 1868, Rector, Royal College, Mauritius; 1878, Director of Public Instruction of Ceylon; 1882, Colonial Secretary, Mauritius; 1883, administered the Government of that Colony; 1885, Lieut.-Governor, British Guiana; 1893, Governor, Windward Islands. His present appointment of Governor of Mauritius carries a salary of Rs. 50,000 per annum. Educational officers need not now despair. By the Mail to hand on 1st March, we notice that, owing to the death of Sir J. B. Thurston, the Governorship of the Fiji Islands has fallen vacant.

* * *

In one of the Mathematical papers set last year at the Artillery College, the following algebraical problem occurs which will interest those who regard whist from the scientific point of view:—"In whist, compare the number of hands that could be dealt, subject to the condition that all contain the king of hearts, with the number of those hands that could be dealt, subject to the condition that they all contain the king of hearts aud no other king."

* * *

A correspondent furnishes the *Civil and Military Gazette* (Lahore) with the following solution of the above problem:—

The number of hands that could be dealt all containing the King of Hearts is evidently the number of hands of 12 cards each that could be dealt from a pack of 51 cards, the King of Hearts being added to each of them to form a complete hand; this is the number of 51 things taken 12 at a time and is represented by the fraction $\frac{51\times50\times\ldots\times41\times40}{1\times2\times\ldots\times11\times12}\ \ldots(a)$

If on the second condition the other three Kings are excluded, the total number of hands in which the King of Hearts could join would equally evidently be the number of hands of 12 cards each that could be

formed from a pack of 48 cards, the Heart King being added as above. This is the number of 48 things taken 12 at a time and is represented by the fraction $\frac{48\times 47\ ..\ \times 38\times 37}{1\times\ 2\ ..\ \times 11\times 12}$ . . (*b*).

When the fractions (*a*) and (*b*) are compared together, their denominators being the same may be left out of consideration, and the terms $48\times 47\times\ ..\ \times 41\times 40$ being common to both numerators may also be disregarded, and the two fractions become simplified to $51\times 50\times 49$ and $39\times 38\times 37$ respectively. Cancelling and multiplying out these are reduced to 20,825 and 9,139, or about $2\frac{1}{4}$ to 1.

INDIAN NEWS.

BENGAL.

The Chancellor of the Calcutta University in conferring upon that distinguished educationist, Sir Alfred Croft, the Degree of Doctor of Laws recognised in the following terms the excellent services rendered by him as Director of Public Instruction for over 20 years, and as a member of the University.

"In one particular at all events during these three years, the University of Calcutta has been conspicuous for its good fortune. It has had as its Vice-Chancellor a gentleman than whom none could be better qualified to follow even the most distinguished of his predecessors. Himself a distinguished student Sir Alfred Croft brought to the duties of the Vice-Chancellorship an unrivalled experience of the educational work of India extending over more than 30 years. As you know, successive Lieutenant-Governors of Bengal have expressed in official documents their appreciation of the great services of Sir Alfred Croft in the responsible office of Director of Public Instruction for the 20 years he has adorned it; and you also know that as Registrar of the University and as a Member of the Syndicate, he had, before he assumed the Vice-Chancellorship, done good work for this University. It is therefore a matter of gratification to me that I have been permitted to take part to-day in conferring upon him the Degree of Doctor of Laws which has been voted to him by acclamation. I trust that he will deem it not only as a recognition of his services to the University, but as a token that we also desire that he should on his retirement carry from us in the University those same good wishes for his future prosperity that I know he will carry with him from many friends in India."

At the recent convocation of the Calcutta University, the following degrees were conferred :—87 M.A.'s, 326 B.A.'s, 216 B.L.'s, 3 M.B.'s, 30 2nd L.M.S.'s, 8 B.E.'s, and 3 L.E.'s.

* * *

The Principal of the Jubbulpur College is on special duty in connection with the Famine Relief Works, a rare instance of an educational officer being entrusted with executive function of no ordinary responsibility.

* * *

The death is announced in London of Miss Florence Holland, an M.A. of the Calcutta University and the founder of the Mussoorie College for girls.

* * *

Following the noble example set by the students of the Bombay Colleges, the students of the Presidency College, Calcutta, have subscribed Rs. 150 towards the Famine Relief Fund. We commend co-operation in the movement to the students of the other institutions.

* * *

Arrangements are being made to form an Association in Calcutta for the instruction of the blind in the Bengal Presidency with the Bishop of Calcutta as Patron.

* * *

Mr. A. C. Edwards, Principal, Dacca College, and acting Professor Presidency College, Calcutta, is appointed a Professor in the Patna College. Mr. S. Robson, Professor, Patna College, succeeds Mr. Edwards as Principal of the Dacca College.

* * *

On the retirement of Sir Alfred Croft, K.C.I.E., Mr. C. A. Martin, LL.D., Senior Inspector of Schools of the Bengal Educational Service, succeeds as Director of Public Instruction, Bengal. The Director's salary in Bengal, as well as in Bombay, is 2,500 Rs. per mensem.

BOMBAY.

At a meeting of the Engineering Faculty of the University held on the 5th March, the election of a Dean, which lay between Mr. Principal S. Coote and Mr. H. I. B. Hargrave, was proceeded with. Mr. H. I. B. Hargrave was elected Dean and also a Syndic, the other Syndic elected being Mr. W. C. Hughes. Subsequently a meeting of the Faculty of Medicine was held, the business being the election of a Syndic, which lay between Dr. K. N. Bahadoorji and Surgeon-Major K. R. Kirtikar. Dr. Edaljee Nusserwanjee, Dean of the Medical Faculty, presided at the meeting. There was a strong muster of Fellows belonging to the Faculty. Dr. Bahadoorji having withdrawn from the contest, Dr. Kirtikar was elected Syndic unopposed.

Mr. E. Giles, M. A. (Oxon), Inspector of Schools, Sindh, who is so well known in Bombay educational circles, has been gazetted Director of Public Instruction *vice* Mr. K. M. Chatfield, M. A. (Oxon), who retires on the 31st March. All educationists will be glad to see that the Bombay Government, like the Bengal Government, has decided to choose its Director of Public Instruction from among officers of the Department.

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Mr. S. Cooke, M.A., F.I.C., F.G.S., Assoc. M. Inst. C.E., Principal, College of Science, Poona, has been granted furlough for one year from the 20th instant or such date thereafter as he may avail himself of it.

* * *

Mr. H. F. Beale, Assoc. M. Inst. C. E., acts as Principal, College of Science, Poona, during the absence of Mr. S. Cooke, M.A., F.I.C., F.G.S., Assoc. M. Inst. C.E., continuing to hold his present professorial chair.

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Mr. H. M. Page, F.I.C., F.G.S., acts as Professor of Chemistry and Geology, *vice* Mr. S. Cooke, M.A., F.I.C., F.G.S., Assoc. M. Inst. C.E.

* * *

The following appointments have been gazetted:—

Mr. R. D. Prior, M.A. (Cantab.), to be Educational Inspector, Central Division, until the return to duty of the Hon'ble Mr. T. B. Kirkham, Bar.-at-Law; Rao Bahadur Alumal Trikamdas Bhojvani, B.A. (Bom.), to act as Educational Inspector, Sind, from the date of departure of Mr. E. Giles till relieved by Mr. R. D. Prior or pending further orders. Mr. Byramjee Framjee Patel, B.A. (Bom.), to be substantive *pro tem.* Principal, Elphinstone High School, pending further orders. Khan Saheb Sidikali Fredunbeg Mirza, B.A. (Bom.), to act as Deputy Educational Inspector, Kurrachee, *vice* Rao Bahadur Alumal Trikamdas Bhojvani or pending further orders. Mr. Chaturbhuj L. Ojha to act as Deputy Educational Inspector, Hyderabad, *vice* Khan Saheb Sidikali Fredunbeg Mirza or pending further orders.

* * *

Professor G. K. Gokhale, Professor of Political Economy at the Fergusson College, Poona, has been chosen to give evidence before Lord Welby's Commission of Enquiry into Indian Expenditure. His fellow delegates are Mr. D. E. Wachha, who has been selected for Bombay, Mr. Surendra Nath Bannerjee, well-known in the educational world of

Calcutta and Mr. G. Subramania Aiyar, Editor of the *Hindu*, who has been chosen for Madras.

* * *

We gather the following particulars from the report of the Bombay Education Society' for 1896. The total receipts for the year amounted to Rs. 68,879-4-10, against an expenditure of Rs. 68,352-5-5, as compared with Rs. 68,360-14-2 and Rs. 68,979-7-6, respectively, of the previous year. At the close of the year there were 265 boarders and 66 day-scholars, the average of the boarders for the year being 259. The Rev. W. E. Scott, acting Archdeacon, was requested to examine the schools in religious knowledge. He states that "both boys and girls did so well in the examination," that "the bright eagerness with which the answers were given *viva voce* in the middle divisions of both schools, was most enjoyable," and that "the lower divisions in both schools did well also." The Hon'ble Mr. Kirkham, Educational Inspector, C. D., paid his usual annual visit to the schools in November last, and has reported very satisfactorily on the state of the schools. With the girls' school also, the Inspector "was well pleased with the results of the examination. The girls did well in all the ordinary subjects of instruction, and the higher classes maintained their reputation for the excellent recitation and explanation of English poetry. The needle-work throughout the school was unusually good." The Inspector considers that "the state of the boys' school reflects credit on Mr. English, Mr. Thomas, and the rest of the staff,"and congratulates Miss Parker and her Assistants on a year's hard and successful work. The directors have very great pleasure in endorsing the praises bestowed on the staff. The Inspector regrets that nothing has been done towards the resuscitation of the school workshop. While quite agreeing with the views of the Inspector as to the great advantage to be derived by the boys from the discipline and recreation of a properly-organised workshop, the directors regret that it is out of their power at present to organise a suitable workshop, especially as they understand that no assistance can be expected from the educational grant for some time to come. There has been no change in the teaching staff of the schools, except in the post of Third Mistress. Mr. English, the Head-master, was granted leave during the year to visit England, during which time the Second Master, Mr. Thomas, most efficiently acted for him. The boys' school continued its successes at public competitive examaminations, all the three senior Government scholarships having been secured by the boys of the school at the last examination. It is the first time since the founding of these scholarships that any one school has succeeded in securing all of them at one

time. Three boys have also passed the entrance examination as miltary medical students in the Grant Medical College, securing first and second places among thirty candidates for the six vacancies. Four others have entered the Eastern Telegraph Office. The Cadet company now numbers forty-one, and they still show themselves enthusiastic and regular both at the commanding officer's and company parades. They hold the Bayley Cup for proficiency for the year 1895-96. The lady visitors have extended their visits to the boys' school, as mentioned in the last report. During the year 71 children (37 boys and 34 girls) were discharged from the schools while the admissions amounted to 55. Of those admitted 18 were soldiers' children, 5 total orphans, 14 fatherless, 5 motherless and 5 entirely destitute. Eleven were admitted on the free list.

The Superintendent of the press reports that all departments of the press were fully employed during the past year, and that the outturn of the work was fully equal to that of previous year.

* * *

The Right Rev. the Lord Bishop of Bombay presided at the annual prize distribution of the Bombay Educational Society on the 3rd March. In the course of the proceedings His Lordship said that happily school prize-givings in Bombay were neither few nor far between, schools being numerous, and each one trying to mark its yearly progress by such an event, and also to give its pupils what has been said to be the most triumphant sense of success that ever comes to any one in life, the reception of a school prize in public. This being so, he could not hope to find anything original to say on such an occasion—unless it were in that sense in which Mr. Ruskin says that the only originality which is worth anything is sincerity—speaking from the heart, and so securing that the words said represent the very personality of the person saying them—in which sense anything that he had to say about the Bombay Education Society must possess originality enough. With this preface, he would pass to very old facts indeed, indicating the services which the Society had rendered to the European community of this Presidency. He should confine himself to the period, now over twenty years, covered by his personal acquaintance with the Society and its schools. During that time, upon an average, about eighty young people had left the schools yearly to commence the struggle of life. Supposing that one-fourth of those left the schools before completing their full time there, that left a total of about twelve hundred who must have left, taking with them all that it was in the power of the Society to do for them—twelve hundred of that class who, in India, stood notoriously at the greatest disadvantage for rising to the standard which was expected of them.

They had to keep up the reputation of their race in India, to show what English people and Christians could be among heathen surroundings, while yet belonging to homes where the parents, however good their will, were unable to give their children those advantages, without which they could not be expected to hand on, unimpaired, to others the traditions which we, as Englishmen, desired to see maintained by the poorest of our countrymen here. Of these twelve hundred, perhaps one in every fifty came from a home where money could be raised to pay in full what he cost the Society. And even those sixty or so could certainly never have received a like education for the same cost had not the Society been prepared to provide the plant and the *personnel* of a large educational establishment. Of the remainder, about one in sixteen paid half of his own expenses, while the rest, nearly one thousand in number, after all these deductions, had contributed either nothing at all or only a nominal sum towards their own expenses—the number who paid nothing being, to those who paid a nominal amount, as about three to one. The net result of all this was that in about twenty years the Society had provided some one thousand starts in life for nothing, or for a nominal payment, and over two hundred more for a very small payment, without saying anything about those other children who had been in its schools for a shorter time, and passed away without receiving all that it could do for them. If it was remembered that the total European population of the Presidency, including troops, did not get anywhere near six figures, this must be regarded as a most substantial contribution to its well-being. But how were the children now in the schools responding to what was being done for them. He found, first, in the report of the Government Inspector one word which he had read with immense satisfaction—the word 'usual,' or some equivalent phrase recurring again and again. The Inspector did not simply say that the schools were in excellent working order, but that they were in their usual excellent working order; not only that drill was excellent, but that it continued to be excellent; not only that girls recited their poetry well but that they maintained their reputation for reciting it well. These phrases showed that the tradition of the schools was what it ought to be, that boys or girls, on first joining, found an incentive to well-doing in the sense that much was expected of them, that they must be on honour to keep up the character of their class, and that the doing of their duty was made easy for them by the sense that those about them were doing it. Again, the Acting Archdeacon, a former Secretary, and deeply interested in the Society, had used an expression which told the happiest tale of how work was done in the schools. He spoke of the "bright eagerness" of the answering in some of the

cripture classes—a phrase which indicated that lessons were not only known but entered into with hearty zest and enjoyment. Turning to he children, he went on—"Remember, children that as long as we hear of "bright eagerness" in your answering, so long we shall feel sure that you are doing well in all ways, as this means that your hearts a[illegible]e in your duty." He could remember, he said, but would [illegible] now recall, words of a very different import, which [illegible] once been used in a report of the school, and the ch[illegible] was something to do one's heart good. Surely these [illegible]tures of the reports led to the inevitable conclusion that to [illegible] at the head of both the schools, and also the staff who of [illegible] them, were giving to the Society that which no salaries [illegible]e, work done "as ever in their great Taskmaster's Eye," [illegible] hearty endeavour for the welfare of the children committed [illegible] hen the speaker had been in England a few years ago, choos- [illegible] for his own boys, he had been delighted to find how many [illegible]s were at work there, to whom education was not so much a [illegible] as a passion—whose whole heart and soul was so thrown into the[illegible] hat in the promotion of the well-being of those under them they fo[illegible] the whole interest of their lives, and the whole consummation of their careers. Might we not hope that the Bombay Education Society was being served somewhat in that spirit? There were others, about whom he must say a word before he sat down—those who gave so much of their time and thought freely to the service of the schools in work on the committee. The Society had been fortunate enough to have friends, some of whom had given their time once a fortnight to such work, year in, year out, over a term which exceeded the official life-time of most Bombay residents. And it was only one who had worked with them—though he had not borne the burden and heat of the day as they had done—who could appreciate the sacrifices which this entailed, coming as it did at the end of a long day's professional work. In conclusion, while he had not of late years been as conversant with the schools as he could have desired, he yet was able to see a vast change for the better in all those external signs by which the *morale* of a school can be so well judged—increased alacrity, brightness, cheeriness and straightforwardness among the children. The progress in this respect in the twenty years was something on which the Society might be most warmly congratulated.

MADRAS.

The Director of Public Instruction has issued orders empowering the Heads of Arts and Professional Colleges, the Superintendents, School of Arts, Reformatory School, and the Presidency Training School for Mistresses, and Head-Masters, Madrasa-i-azam and School of Commerce, Calicut, to grant to their subordinates casual leave not exceeding five days at a time and ten days in the year; but the sanction of the Director is required if the head of the office himself requires such leave. He is, however, permitted, in cases of real necessity and emergency, to avail himself of one day's casual leave in anticipation of the sanction of the Director, provided the circumstances of the case are immediately reported to him.

* * *

Mr. A. A. Hall, Principal of the Teachers' College, Saidapet, having proceeded to Europe on 18 month's furlough on the 20th February 1897, Mr. H. S. Duncan, Vice-Principal, has been appointed to act for him. Mr. T. R. Scott, B.A., Lecturer, Rajahmundry College, acts for Mr. Duncan as Vice-Principal in the Indian Educational Service.

* * *

The next Written Examination for Teachers' Certificates will be held on the 29th and the 30th April 1897. Applications for admission to the examination should be sent to the Secretary to the Board of Examiners for Teachers' Certificates, Madras, on or before the 15th March 1897.

* * *

On the recommendation of the Resident in Mysore, the Madras Government has given assent to students belonging to the Civil and Military station of Bangalore being trained in the Madras Training Institutions including the Teachers' College, Saidapet, on the understanding that the prescribed fees are paid to the Government on behalf of the students that are sent for training.

* * *

His Excellency the Governor in Council has accorded sanction to the dates of the following degree examinations being changed as recommended by the Senate, and the first examination under the new alteration will be held in 1898.

(1) Examination for the degree of Master of Laws—second Monday in January instead of the third Monday in January.

(2) First Examination in Engineering—second Monday in January instead of the third Monday in January.

(3) B.E. degree Examination—second Monday in January instead of the third Monday in January.

(4) Examination for the degree of Licentiate in Teaching—second Monday in January instead of the fourth Monday in January.

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The Committee of the Doveton Protestant College has decided that in future non-Christians should not be admitted into the College.

* * *

The final match of the Presidency College Football Tournament was played on 25th February between the Presidency College and the Law College, and was won by the former. The Presidency College has been very successful in recent athletic competitions and we offer them our hearty congratulations.

* * *

The Principal of the College of Engineering, Madras, has notified that 6 Civil Engineers, 15 Engineer Subordinates, 11 Draftsmen and 17 Surveyors have completed the prescribed course of instruction in the College on the 31st December 1896, and has circulated their names with address to Local Boards and Municipalities, &c., with a view to their being employed by those bodies as vacancies occur.

* * *

The Coimbatore Teachers' Association resumed its work for the session which was in abeyance for some time past in consequence of its founder and Secretary M.R.Ry. C. T. Parthasarathi Mudaliar, B.A., L.T., having left the place. On the 22nd February 1897, an ordinary meeting of the Association was held in the premises of the Government Training School, and it was well attended. M.R.Ry. C. N. Krishnaswami Aiyar, B.A., L.T., read a very interesting paper on "Translation as it is and as it should be done."

* * *

The results of the written test of the recent L. T. degree examination have just been published, and we quote the following figures from the list for the information of our numerous readers.

	Appeared.	Passed.	Percentage.
Teachers' College, Madras ...	47	33	70
Training College, Rajahmundry.	8	7	88
Private candidates	20	14	70

Considering the various disadvantages under which the Rajahmundry College labours, the institution deserves to be congratulated on the splendid results achieved by it at this examination.

* * *

College of Agriculture Athletic Sports.

The annual athletic sports of the College of Agriculture, Saidapet, were held on Saturday the 20th February before a large audience, which

included Lady Havelock, the Elaya Rajah of Travancore, the Hon'ble Dr., Mrs. and Miss Duncan, Colonel Nutt, Messrs. Stuart, Stone, Hall, Jones, and several other ladies and gentlemen. The College building, which was decorated in the usual manner, was reserved for native ladies, a large number of whom attended. The cricket field, on which the sports took place, was decorated with flags and foliage plants and presented a gay appearance. The band of the 14th M. I. played a selection of music during the afternoon. The following were the chief events :—

High Jump.—K. Subbiah (1), V. Krishna Menon (2) ; *Long Jump.*—P. Ramasawmy Iyengar, (1), S. Ramachendran (2) ; 200 *Yards' Race.*—K. Subbiah (1), P. Purushottam Naidu (2), C. Muthanna (3) ; 100 *Yards' Race.*—K. Subbiah (1), P. Purushottam Naidu (2), C. Muthanna (3) ; *Hurdles.*—(Prize presented by H. H. the Elaya Rajah of Travancore). K. Subbiah (1), P. Purushottam Naidu (2), T. R. Chengalroy Moodelly (3) ; *Obstacle Race.*—(Prize presented by the Hon'ble Dr. Duncan). T. R. Chengalroy Moodelly (1), V. Krishna Menon (2), C. Muthanna (3) ; *Blindfold Race.*—Purushottam Naidu (1), T. R. Chengalroy Moodelly (2) ; *Sack Race.*—S. Ramachendram (1), A. R. Chandra Sakaram (2) ; *Three-legged Race.*—K. Subbiah (1), T. R. Chengalroy Moodelly (2).

In addition to the above there were cooly and establishment races and races for the Band.

Messrs J. H. Stone and A. A. Hall acted as Judges and Mr. Boon as Steward, while the arduous duties of Honorary Secretary were undertaken by Mr. Ramasawmy Sivan.

* * *

The Second Anniversary Meeting of the Madras University Union was held on the evening of Saturday, 27th February, at the Presidency College, with the Hon'ble Dr. Duncan in the chair. Dewan Bahadur R. Raghunatha Rao delivered an interesting address on "The Intellectual Progress of the Last Fifty Years," which we reproduce elsewhere. At the conclusion of the meeting Dr. Duncan made the following remarks :—

He was glad to see that the Union was able in a fairly efficient way to carry out the great aims with which it had started. With those aims every one who was interested in the educational and material welfare of the country could not but heartily sympathise. The Union was intended to bring together the students of the different colleges to discuss topics of interest with one another and thus sharpen their wits. This was a very desirable object. The great defect in their system of education was that they had a number of affiliated Colleges which more or less lived each its own life apart

from the other colleges, and they were all linked together by what was known as the University to which they were affiliated. They might be aware that before long the question of the relation of the affiliated colleges to the University would come before the Senate for consideration and he sincerely hoped that the outcome of the deliberation would be to bring all the Colleges more closely together and thus to promote one of the great aims which the University Union had had in view from the outset. He regretted that considering the student population of Madras, the strength of the Union was not encouraging. He hoped that before next year many more would join the Union. When the Union secured for itself a local habitation which was so necessary and started a library of its own, he promised to give them a small grant from the public allotment for the purchase of books. Speaking on the subject of the lectures, he said, with regard to the Vernacular languages, he heartily agreed with the lecturer that it was most desirable that a knowledge of the Vernaculars should be kept up. They were not, however, so bad as the lecturer represented them to be. There was no doubt that the knowledge of the Vernacular languages required to be improved. With the help of Mr. Justice Subramania Iyer, he would bring before the Senate before long the question as to what steps could be taken to improve not only the study of the Vernaculars generally, but also of the literary history of Southern India and to make it more efficient than it was now. Sir Mr. E. Grant Duff in his convocation address referred to the great individuality of the Dravidian literature and culture of Southern India, and thought it a great pity that something should not be done to investigate the past of that literature and keep it up in a flourishing condition. He hoped that by the proposed measures the Senate might be able to fulfil what Sir M. E. Grant Duff thought so desirable. He was not prepared to go with the lecturer in thinking that the present Educational system was inimical to the study of Vernaculars. There was really nothing in the system to prevent the study of the Vernaculars; on the other hand, every provision was made to give ample scope for the improvement of the Vernaculars, as for instance, in having made provision for the examination wholly in Tamil of such students as took up Tamil as their first language for the Upper Secondary Examination. If, as suggested by the lecturer, boys should be made to study the Vernaculars for some years before taking up English they would be in the disadvantageous position in which Mahomedan boys at present were, *viz.*, they would commence their English studies too late to be of any great use. He did not again agree with the lecturer in thinking that a lower tone of morality prevailed nowadays than in the past. On the other hand, his experience was that there had been a distinct elevation in the moral tone since the advent of the present system of education. As regards the teaching of religion to students, the Chairman thought it would be best to leave it to the parents of the children and their religious teachers. As for general educational reform, the Chairman was quite willing to welcome criticisms and suggestions. He was perfectly at one with the lecturer in thinking that it was the duty of all Governments to educate the people up to a certain

standard and leave the luxury of higher education to those who were anxious to secure it. It could not however be said that the Government neglected the interests of higher education in promoting the interests of primary education. In conclusion, he assured the lecturer he would give his best consideration to the suggestions put forward by him for the improvement of the present educational system.

* * *

The "failed B.A." of the local University has been very much in evidence of late and the recently published pass-lists for the B.A. examination show that his numbers have been considerably augmented since we last heard of him. It will be recollected that his champions won the day by a majority of two votes when it was proposed that the bye-law, compelling him to attend a first-grade college for a year before appearing for re-examination should be rescinded. It was this victory which led the local journals to discuss the fate of the "failed B.A." from different stand points. Several correspondents, who took part in this discussion, brought to the notice of the public that Mofussil colleges, though often vitally affected by decisons of the Senate, had no voice in the management of University affairs, which were controlled almost entirely by such fellows as happened to be resident in or near Madras. This grievance was too real a one to be passed over in silence and we are glad to see that the Syndicate has taken up the matter and has recommended the Senate to appoint a Committee to report upon the following suggestions:—

(*a*) Proposal from the Hon'ble Mr. D. Duncan that a representative committee of the Senate be appointed to deal fully with the question of the relations of the affiliated colleges to the University and submit a report to the Senate.

(*b*) Proposal from Mr. J. H Stone that "it is desirable that students who rejoin a college after failing in an examination in arts should be made amenable to college discipline and that therefore certificates of attendance should be required from them under similar rules to those which regulate the grant of certificates to candidates going up for the first time." (To be proposed by the Hon'ble Mr. D. Duncan.)

Should the relations of the affiliated colleges to the University be satisfactorily arranged, the "failed B.A." may console himself with the thought that he has not lived in vain.

* * *

Her Excellency Lady Havelock gave a treat to the orphans of the following institutions on the evening of the 2nd instant at Government House. 1. St. Mary's Orphanage, 2. The Military Female Orphan

Asylum, 3. St. Patrick's Orphanage, 4. The Gordon Refuge, 5. The Industrial School.

* * *

The Director of Public Instruction has issued detailed instructions for the preparation and submission of the Annual Returns for 1896-97, and, as usual, draws the serious attention of the officers responsible for the preparation of the returns to the necessity and importance of carefully checking them.

* * *

It was under contemplation to raise the Maharani Girls' School, Mysore, to the F.A. standard in order that girls may receive collegiate education side by side with boys, but the proposal has been abandoned for want of funds.

* * *

Our Malabar correspondent writes:—For the first time in the history of the Madras University a Namboudri Brahman, Mr. C. Krishna Bhattathiri, has been successful at the B.A. Degree Examination. The Namboudri Brahmans are recognised as the most conservative section of their caste, and are indigenous on the West Coast of India. Those in Malabar are known as Namboudris, while those in Travancore are styled Nambouris; and, as Mr. Krishna Bhattathiri is a Travancorean, he should, strictly speaking, be described as a Nambouri.

The Namboudri Brahman community consists chiefly of wealthy landlords and their dependents, who lead a rural existence and have little or nothing to do with modern progress. They were originally supposed to have been fishermen, but there are great doubts about this matter, and their origin is lost in the legends of antiquity. They are orthodox to a degree in their mode of life and are scrupulously exact in their religious observances. Their women are remarkable for their beauty and are practically *Gosha*. In order to preserve the ancestral property intact, only the eldest son of a wealthy Namboudri family marries a wife of his own sect; and the younger members contract morganatic unions with Nayar women who are Sudras by caste. These latter esteem it a great honour to form such alliances; in fact there are certain high class Nayar families, the female members of which will only ally themselves in this irregular fashion with Namboudris. The off-spring of such unions are recognised as Sudras by caste and become members of the joint families or *Tarwads* of their mothers.

Namboudri women are expected to be like Cæsar's spouse—above suspicion; but when any accusation is brought against a lady, a species of court, composed of elders of the community, is formed to investigate the charge. The aggrieved husband has to entertain the members of

this tribunal during the whole period for which the investigation lasts—and the judges as a rule are in no hurry to expedite the enquiry. In case of a decision being given, which in a British Court of Justice would entitle the husband to a decree *nisi*, the peccant wife is put out of caste, and her lot becomes terrible indeed. Her own community will have nothing to do with her, and she is thrown on the world as an erring Magdalene.

Up till now the Namboudri Brahmans have been extremely averse to taking up with English education and English progress; it must not however be supposed that they are an ignorant community, for many of them are erudite Sanskrit scholars and are well versed in ancient Oriental lore.

* * *

The Director of Public Instruction has notified that, in future, the text-books in the second language for the Upper Secondary Examination will be the same as those for the Matriculation Examination.

* * *

Commencing from this year, the Medical College session will begin on the 1st August, instead of on the 1st October. Applications for admission should be sent to the Principal before the 15th July.

* * *

At the meeting of the Senate to be held on Friday, the 19th instant, the following draft of regulations drawn up by the Affiliation Committee of the Council of the Senate of the University of Cambridge for the affiliation of the Madras University to the University of Cambridge will be discussed.

1. That the University of Madras be adopted as an Institution affiliated to the University of Cambridge.

2. That any student of the University of Madras be entitled to be admitted to the privileges of affiliation who has (*a*) in accordance with the regulations of that University studied for no less than two years at one or more institutions for the education of adult students affiliated as a first-grade; (*b*) passed the Matriculation Examination of that University and also passed in the first class in the first Examination in Arts or passed the Examination for the Degree of Bachelor of Arts, obtaining a first or second class in the English language Division of that Examination; provided that in one of these Examinations or in some other Examination held by that University he has satisfied the Examiners in Greek, Latin, Sanskrit, Arabic or Persian.

* * *

On a reference from the Papanasam Teachers' Association, the Director of Public Instruction has decided that teachers who have pass-

ed the late Middle School Examination in the third class and who have qualified for teachers' certificates of the Primary grade must now pass the written and the practical tests of the Lower Secondary Grade in order to qualify for teachers' certificates of that grade.

* * *

The Director having observed from the last official year's returns submitted to his office that, of the teachers trained in Training Schools during 1892-93, 1893-94 and 1894-95, 133 masters and 49 mistresses of all grades remained unemployed on the 31st March 1896, has called upon the Inspecting officers who are, to a certain extent, responsible for this state of affairs, to compel the defaulting students to fulfil the terms of the agreements executed by them. Inspectors are requested to afford unemployed trained teachers facilities for opening schools where none now exist and by displacing untrained and uncertificated teachers in Board and other schools by trained and certificated teachers. In order to see how far the above instructions are carried out by heads of Training Schools and by Inspecting officers, the Director has further ordered that a special report should be submitted to him before the 1st May next without fail.

* * *

At the next Senate meeting, the Hon'ble Dr. Duncan will propose the institution of departmental examinations in Oriental languages and will recommend the establishment of an oriental side in the University. The arguments adduced by him in favour of the proposal appear to us to be sound.

* * *

The convocation of the Madras University will be held on Friday, the 26th March 1897.

* * *

Applications for admission to the ensuing First Examination in Law should he sent to the Registrar before the 1st April 1897.

* * *

The Registrar of the Madras University has notified that, in counting attendance for the first term of the subsequent college course of a candidate who has failed in the B.A. degree examination, that term shall be held to begin on the *tenth* day after the results of that examination have been published.

* * *

Rao Bahadur S. Seshayya, B.A., 1st lecturer, Kumbakonam College, acts as Principal of the Kumbakonam College, during the absence on leave of Mr. J. H. Stone, Principal.

The Depository of the Madras School Book and Literature Society has been removed from its buildings in the Old College to a rented building on the Mount Road.

* * *

Government has ordered that, from 1st January 1898, candidates for the post of type-writing clerks in Government offices should have passed the Government Technical Examination in Type-writing.

* * *

A grant of Rs. 25,000 has been sanctioned by Government towards the Kumbakonam Hostel Scheme, on the condition that provision is made from the beginning for the kitchen and dining accommodation of students of all castes.

* * *

The Maharajah's High School for girls, Trivandrum, is affiliated to the Madras University as a second-grade college with effect from the 1st January 1897.

* * *

The certificate examination in drill and gymnastics will be held in the Teachers' College, Saidapet, on Monday, the 29th March 1897. The examination will, as usual, be conducted by the Board of Examiners for Teachers' Certificates, Madras.

* * *

The Director of Public Instruction has ordered that leaving certificates need not be demanded from pupils coming from closed schools, but the onus of proving that the school from which the pupil comes for admission has been closed lies with the head of the school into which the pupil is admitted.

* * *

The head of the Educational Department thinks that the comparative failure of the Madrasa-i-azam, a school specially intended for the education of Muhammadan youths, is due not to the inefficiency of the staff, as some would suppose, but to the apathetic character of the students and the absence of efficient control over them out of school hours by their parents or guardians. We fully endorse this view of the Director's.

* * *

The current year's budget has provided Rs. 32,000 towards the upkeep of about 150 Government schools to impart Primary education to the children of the hill tribes in the Northern Circars.

* * *

It was given out at the last meeting of the Legislative Council that the re-organisation scheme of the Educational Department in the Madras

Presidency was introduced with effect from 1st January 1897. Nearly three months have passed, and no arrangements have yet come to light.

* * *

Mr. J. B. Bilderbeck, M.A., Acting Principal, Kumbakonam College, reverts to his permanent appointment in the Presidency College as Professor of English, in succession to Mr. J. H. Stone, who proceeded home on furlough.

* * *

The Rev. Dr. Miller proceeds home shortly on account of his failing health. We heartily wish him a speedy recovery.

* * *

Rau Bahadur S. Seshayya, B.A., of the Kumbakonam College, retires from service on the 1st proximo on a well-earned pension. He has served in the Educational Department in various capacities for a period extending over 36 years.

* * *

The results at the recent University Arts examinations are given below and for the purpose of comparison we give the corresponding results for the previous year :—

	1895-96.		1896-97.	
	Registered.	Passed.	Registered.	Passed.
Matriculation	4,676	1,690 ...	5,328	1,642
F.A.	1,926	640 ...	1,628	481
B.A.				
English Language	971	593 ...	888	333
Second Language	764	587 ..	721	617
Branch I. (Mathematics) ...	134	63 ..	135	76
„ II. A (Physics) ...	242	136 ...	141	87
„ II. B (Chemistry) ...	43	16 ...	43	28
„ III. C (Zoology) ...	45	33 ...	35	32
„ III. D (Geology) ...	11	10 ...	6	5
„ IV. (Mental and Moral Science) ...	319	171 ...	269	173
„ V. (History) ...	327	196 ...	224	166

* * *

The following draft rules relating to the Government Scholarship to England have been approved by Government.

(1) The scholarship shall be open to all B.A.'s and M.A.'s, B.L.'s and M.L.'s, M.B.'s and M.D.'s and B.C.E.'s of the Madras University who are under 22 years of age on the 31st March in the year in which the selection is made.

(2) Applications for the scholarship must reach the Registrar of the Madras University not later than the 15th March.

(3) Each candidate must furnish along with his application proofs that the following conditions are satisfied :—(*a*) that the candidate is a native of India; (*b*) that he is under 22 years of age; (*c*) that he has the consent of his family to proceed to England; (*d*) that his conduct has been good; (*e*) that he has sufficient knowledge of the English Language; (*f*) that he possesses physical capacity to undergo the course of life and study he will have to follow in England.

(4) The scholar shall be selected by the Vice-Chancellor on the report of the syndicate, who will in their turn be guided by the opinion of the professors and examiners.

PUNJAB.

The Arts Faculty of the Punjab University is considering the advisability of making transliteration a portion of the Urdu test in the Middle School Examination Up to the year 1879 such transliteration formed part of the Middle School Examination —15 marks out of a total of 50 allowed for the Urdu paper, being assigned to it. In this year, however the Punjab Government appointed a Committee to consider and report upon the comparative difficulties of the examination papers of the Lahore and Calcutta Universities, and the result was that the Committee recommended that transliteration should be omitted. In reconsidering this point, the Punjab University is simply endeavouring to meet the desire of Government to make the use of Roman characters compulsory in all public offices.

* * *

The appointment of Governor of Aitchison's Punjab Chiefs' College at Lahore has fallen vacant owing to the retirement of Colonel Sir B. Bromhead, *Bart.*, who has just attained Colonel's allowances. This college was founded during the Lieutenant-Governorship of Sir Charles Aitchison, the well-known author of Treaties, Engagements and Sanads with Native States (1877-82) and it is reserved for relatives of Punjab Chiefs and youths of good family. The Governor is in charge of the administration of the college and is quite distinct from the Principal, Mr. Godley, who, it will be recollected, was selected for this place while employed in the Madras Educational Service. The salary drawn by Colonel Bromhead was 400 Rupees a month, in addition to the substantive pay of his rank, Rs. 825.

The college is not patronised as well as it might be and the results attained by the pupils have not been very encouraging. The upper-

classes in the Punjab have not taken kindly to education and do not seem ambitious of academic honours; but perhaps with patience they may be induced to change their attitude, though there appears to be little likelihood of this.

NORTH-WEST PROVINCES AND OUDH.

The prize distribution of La Martiniere College at Lucknow took place on the 25th February last in the presence of the usual large and locally fashionable gathering. The Principal, Mr. T. G. Sykes, B. A., commenced the proceedings by reading his report. The year under review was an extremely prosperous one, for the Martiniere Institution had passed a larger number of boys at the public examinations than all the other local schools and had achieved signal success at the Roorki Examination. At the Engineer Entrance Examination, La Martiniere secured the highest place as well as all the places taken by Europeans. In the Upper Subordinate Examination, the six highest places together with all the Government scholarships were secured. In the high or final for European Schools, La Martiniere passed eight, two being placed in the first class by themselves. In the Middle School, the whole class of 31 boys was sent up and 28 passed—that is to say over 90 per cent. were successful, whereas with the other schools the average of successes only came up to 34 per cent. For the Primary School, the whole class of 31 boys was sent up both in compulsory and optional subjects, and all passed both as regards the total and in each of the individual subjects. The Girls' School also had good results to show.

General Corrie Bird, commanding the Oudh Military District, who by the way is the only Madras Officer holding a high command in North India, next addressed the boys in his capacity as President of the Governing Body and remarked that the unexampled success attained by the college was extremely gratifying, as these results had been achieved by real hard work on the part of teachers and students and not by a process of cramming; and the gallant General concluded by heartily congratulating Mr. Sykes and his tutorial staff.

A performance of vocal and instrumental music was now given by the boys and girls of La Martiniere; and after the National Anthem had been sung and three cheers given for General Bird, Mr. Sykes and all concerned, the boys and girls sat down to an excellent feast which had been provided for them. The toast to the memory of the founder of the Institution was as usual drunk in silence—and it may be interesting to remark that Colonel La Martiniere, who founded the colleges

named after him at Calcutta and Lucknow, was an officer who deserted from the French and joined the East India Company's service. After this toast, the visitors and elders withdrew and the young people were allowed to enjoy themselves as best they wished.

REVIEWS OF BOOKS.

We have to acknowledge the receipt of the following Books :—

From *Rivington, Percival & Co.*, London.—Rivington's Single Term Latin Readers, First Term (Book 1), by W. Greenstock, B.A. Price 8*d*. ;—Rivington's Single Term Latin Readers, Second Term (Book 1), by W. Greenstock, B.A. Price 1*s*.;—Rivington's Single Term Latin Readers, Third Term (Book 1), by W. Greenstock, B.A. Price 1*s*.

From *Macmillan & Co.*, London.—Minna Von Barnhelm, an Historical Play, by Chas. Merk, M.A., Ph. D. ;—Price 2*s*. 6*d*.;—London—Pope's Essay on Criticism, by J. C. Collins, M.A. Price 1*s*. 9*d*. ;—Bunyan's Pilgrim's Progress in Modern English, by J. Morrison, M.A., B.D. Price 1*s*. 6*d*.

From *Singh & Brothers*, Jeypore.—An Outline of Locke's Essay Concerning Human Understanding, by Sanjiban Ganguli, M.A., Vice-Principal, Maharajah's College, Jeypore. Price 4 *As*.

A NEW MANUAL OF GEOGRAPHY. EUROPE AND SCHOOL HEADINGS IN GEOGRAPHY. Europe, By E. R. Wethey, M.A., F.R.G.S. London : *Rivington, Percival & Co.*

These two form the fourth and last of the Series. The latter supplies the headings and presents merely the outlines, while the Manual following the same order expands, explains, and supplies all the details. The design of the work is to make oral teaching of Geography easily practicable and the 'Headings' is to be put into the hands of the pupils, while the larger book is intended for the use of the teachers. The author intends the book for all the forms and though the matter may seem too full and detailed for the lower ones, it is perfectly open to the teacher to select such parts only as are suitable to the class. Nor need the teacher follow the order of the book. The arrangement of the matter, the variation in type, the copious index and references and the neat and clear maps and plans will make the volume a welcome addition to the school books on Geography.

THE HARPUR EUCLID. BOOKS 1—3. *Longmans, Green & Co.*

The Harpur Euclid is an edition of Euclid's Elements revised in accordance with the reports of the Cambridge Mathematical Board who are of opinion that a rigid adherence to Euclid's texts "is prejudical to the interests of Education and to freedom in the method of teaching." The edition before us is essentially a school edition, in which while retaining the order of Euclid's Elements, the demonstrations are, wherever needed, rendered easier and shorter. All important propositions are followed by Notes of great value to the students and by a collection of simple riders. The collection of miscellaneous exercises and the appendixes to each Book explaining some general Geometrical theorems, as contact circles, Quadrilaterals, etc., enhance the value of the edition. We confidently recommend the book for use in the High School classes.

OBJECT-LESSONS FOR STANDARDS I, II and III. By Garlick and Dexter.
Longmans, Green & Co.

The Educational Department of England in its Circular to H.M.'s Inspectors not only defines the nature of object-teaching, but also furnishes a list of suitable subjects for object-lessons. It is from this list that the authors of this book have selected their lessons and we recommend the book as well for the carefulness of selections as for the methods of treatment which follow up the lines indicated in the Circular. The book is an excellent teachers' hand-book and points out to the teacher the observations and experiments to be made, the results to be observed and the inferences to be drawn. The clearness in the arrangement, the appropriate diagrams, and the variety in type make the book very attractive, and we think every teacher of object-lessons in our schools will derive much valuable help from it.

A HANDBOOK OF GREEK CONSTITUTIONAL HISTORY. By A. H. J. Greenidge, M. A. *Macmillan & Co.* 5s.

This volume of Messrs. Macmillan's series of Handbooks of Archæology and Antiquities will be welcomed by teacher and student alike. Though not prepared to accept Mr. Greenidge's statement that "constitutional law can be found in no more perfect form than in the States of the old Greek world" we do not require any such justification for this little book. Information as to the less conspicuous City States of Hillas is not so readily accessible in a convenient form that its appearance needs excuse. Though a large part of the book is devoted, as might be expected, to Sparta and Athens as cities and as heads of confederacies, the author has by no means confined himself to this, the more hackneyed

portion of his subject. Thessaly, Locies, Thebes, Megara, Corinth, Crete, Argos, Syracuse, and Rhodes are among the less known States or groups of States dealt with at such length as scanty materials will permit. Throughout, Mr. Greenidge's aim has been to exhibit constitutional workings rather than mere structure, to breathe life in fact into "the valley of dry bones." Thus the volume should serve as companion to Whide Fowler's well-known little work, filling in more detail the broad lines of development there exhibited. A pleasantly printed political map of Greece forms a serviceable addition to this useful volume.

LIFE AND WORKS OF LORD MACAULAY. (Edinburgh Edition, in 10 vols.) *Longmans, Green & Co.*

We have received the initial volume, containing the first six chapters of the History, in this new ten-volumed edition of Macaulay's life and works. On the subject matter it is unnecessary at this time of day to dwell. Macaulay's position as a historian has for the present at any rate been assigned him. He looms considerably smaller than he did in the eye of his own generation. The very aggressiveness of his style is a rock of stumbling to a school of history with whom facts are everything and accuracy more to be desired than antithesis. Painted in startling contrasts of black and white his pictures are an offence against the destiny, that has declared that drabs and greys shall be the living of humanity, that man as we know him is neither devil nor angel, only the embryo of one. Still his very faults in the sight of the scientific student form Macaulay's chief attractions for the public. In that he is eminently readable he will never lack an audience. The average man likes vivid colouring, an occasional scandal in a style that moves. All these Macaulay has provided for him while Messrs. Longmans, Green and Co. bring them forth in "the lordly dish" of an admirable library edition, published at cheap rates.

THE MECHANICAL POWERS. By Dorabjee H. Wachha, M.A., Educational Department, Bombay. *Mrs. Radhabai Atmaram Sagoon.* Price 1 *Re.*

We have perused this little book with care and feel sure that it will serve the purpose for which the author has intended it, *viz.*, as a school-text for the Matriculation students of the Bombay University. The system followed of treating almost the whole subject in a popular way reserving the consideration of the strictly mathematical or theoretical portion, which is a stumbling-block to the majority of the students, to the last chapters, cannot fail to make the book popular in the hands of the student population. In the chapter on Pulleys, the 1st and 3rd

systems which are more of theoretical interest than of any practical value might have been safely omitted in an elementary book of this kind but for their being included perhaps in the Matriculation Syllabus. The following points however struck us as peculiar.

Para. 6. The explanation of Force is clear but its definition towards the end is not sufficiently comprehensive. It does not include a force which only tends to move.

Para. 9, end. The real meaning of the word *strain* is made obscure by making the string break. The elongation of the string is itself *strain* enough. See also page 125 line 1, where *strain* is used for *stress.*

Para. 11, end. The book is not balanced by the *friction* of the table but by its *reaction.* The friction may be conveniently supposed to have nothing to do here.

Para. 13. Begins with the word *Thus*, which may be omitted.

Para. 14. "The line, in which the table moves when pulled, shews the direction of the pull." Not necessarily.

Para 15. Begins with a single force and ends when speaking of magnitude, the 3rd element, with a number of forces, which confuses a beginner.

Para. 38. The word *modulus* is used instead of the proper word *advantage. Modulus* has a distinct meaning which is not explained anywhere in the book.

Para. 74, end. The sensibility of a balance is above all things chiefly due to the nearness of the centre of gravity to the axis of suspension. This point is omitted.

Some of the points above noted may be due to the hurry in which books are now written and published and the others may perhaps be left as they are in an elementary treatise of this kind. The questions and examples are well selected and arranged and the book should on the whole be very useful, not only to students for whom it is intended, but also to casual readers who have a taste for the subject.

Botany for Beginners. By Henry Edmonds, B.Sc. London: *Longmans, Green & Co.*

This little book presents in an attractive form the elementary facts of a fascinating science. The method is good, the style simple and clear. There is enough in this book to call forth the power of observation and to excite an interest in the subject in the minds of the young.

MATHEMATICS.

Solutions of Questions.

150. (*A. K. S.*) P and Q are points on an equilateral hyperbola, such that the osculating circle at P passes through Q; show that the envelope of PQ is the curve $4(4k^2-xy)^3=27k^2(x^2+y^2)^2$.

Solution by R. Ramachendra Row, B.A.

Let $xy=k^2$ be the hyperbola, any point on which is $\left(kt, \frac{k}{t}\right)$ where t is variable, and any tangent is $\frac{x}{t}+yt=2k$.

Any conic having contact of the second order with $xy=k^2$ is given by the equation $\lambda(xy-k^2)=\left(\frac{x}{t}+yt-2k\right)\left(lx+my-lkt-\frac{mk}{t}\right)$, the second factor on the right hand side being the chord of contact.

If the above is a circle, $l/t=mt$; and the equation of PQ becomes

$$tx+\frac{y}{t}=k\left(t^2+\frac{1}{t^2}\right)$$

Multiply by t and differentiate $2tx=k\left(3t^2-\frac{1}{t^2}\right)$.

Divide by t and differentiate $-\frac{2y}{t^2}=k\left(1-\frac{3}{t^4}\right)$.

Eliminating t, we get $4(4k^2-xy)^3=27k^2(x^2+y^2)^2$.

193. (*C. N. Cama*). To find the area of the triangle formed by joining the circumcentre, the incentre and the orthocentre of a triangle

Solution by T. Sundara Row, B.A.

Let O be the circumcentre, I the incentre, and P the orthocentre of the triangle ABC. Draw OD, IE, PF perpendicular to BC.

Then the triangle $OIP=\frac{1}{2}\{IE.\ DF-OD.\ EF-PF.\ DE\}$.

$IE=R(\cos A+\cos B+\cos C-1)$.

$DF=R\sin(C-B)$.

$OD=R\cos A$.

$EF=R\{\sin(C-B)+\sin B-\sin C\}$

$PF=R\{\cos(C-B)-\cos A\}$.

$DE=R(\sin C-\sin B)$.

Substituting these values and reducing, we get for the area of the triangle $-2R^2\sin\frac{1}{2}(B-C).\sin\frac{1}{2}(C-A).\sin\frac{1}{2}(A-B)$.

194. If $\tan 2\alpha-\tan\alpha=\tan 2\beta-\tan\beta=\tan 2\gamma-\tan\gamma$, then prove that $\alpha+\beta+\gamma$ is an odd multiple of $\frac{\pi}{2}$.—[*Hobson*].

Solution by A. Radhakrishna Aiyar, B.A., and others.

Let $\tan 2\theta - \tan\theta = x$, then, $\tan^3\theta + \tan^2\theta . x + \tan\theta - x = 0$;

Since, α, β, γ are the values of θ which satisfy this equation, we have

$$\tan\alpha \tan\beta + \tan\beta \tan\gamma + \tan\alpha \tan\gamma = 1 ;$$

or $\tan(\alpha+\beta+\gamma) = \infty$; $\therefore \alpha+\beta+\gamma = n\pi + \frac{\pi}{2} = (2n+1)\frac{\pi}{2}$.

Questions for Solution.

224. (*T. Sankara Row, B.A.*) Evaluate the following integrals :—

$$(1) \int \log\frac{a}{x} . \sin^{-1}x \, dx. \quad (2) \int x \sin^{-1}\tfrac{1}{2}\sqrt{\frac{2a-x}{a}}\, dx.$$

225. (*C. N. Cama*). The number of ways in which $3n$ things can be distributed in n groups of 3 each is $\dfrac{3\,(3n-1)\,!}{6^n\,(n-1)\,!}$.

226. (*C. N. Cama*). Prove that

$$\frac{2^6 \sin^7\theta + \sin 7\theta}{2^6\cos^7\theta - \cos 7\theta} = \tan\theta \tan^2\left(\theta + \frac{\pi}{6}\right). \tan^2\left(\theta - \frac{\pi}{6}\right).$$

227. In a system of smooth weightless pulleys, a weight W is just supported by a smaller P. Prove that, if these weights are interchanged, the acceleration of their centre of mass will be $\dfrac{(W-P)^2}{W^2-WP+P^2}.g$.

—[*Madras, B.A.* 1897.]

228. (*Sundara Row, B.A.*). ABC is a triangle. AD, BE, CF are straight lines drawn from the angular points to the opposite sides so that the angles ADC, BEA, CFB are each equal to α. BE, CF cut in A′; CF, AD in B′; AD, BE in C′. Then, prove that

(i) the triangle A′B′C′ is similar to ABC, the ratio of the homologous sides being $2\cos\alpha$ and that of the areas $4\cos^2\alpha$;

(ii) the circumcircles of the triangles A′B′C′ are concentric, with the orthocentre of the triangle ABC for their common centre ;

(iii) when $\alpha = \frac{\pi}{2}$ *i.e.*, when AD, BE, CF are perpendicular to BC, CA, AB respectively, the triangle A′B′C′ reduces to a point and coincides with the orthocentre. When $\alpha = 0$, *i.e.*, when AD, BE, CF are parallel to BC, CA, AB respectively, the triangle A′B′C′ = four times the triangle ABC.

(iv) the loci of A′, B′, C′, and of the *in*-and *ortho*-centres of the triangles A′B′C′ are circles passing through the orthocentre of the triangle ABC.

229. (*V. Ramaswami Aiyar, M.A.*). The natural harmonic progression being divided into the two series,

$$1 + \tfrac{1}{3} + \tfrac{1}{5} + \ldots\ldots\ldots\ldots\ldots$$

$$\text{and } \tfrac{1}{2} + \tfrac{1}{4} + \tfrac{1}{6} + \ldots\ldots\ldots\ldots\ldots$$

show that the sum of n terms of the former series is less than the sum of $4n$ terms of the latter series by a quantity which diminishes as n increases and vanishes when $n = \infty$

230. (*T. R. Venkataswami Nayudu, B.A.*) Solve the following question from *Heath's Optics* and point out what condition is wanting in it :—

"A luminous point is placed within a reflecting circle ; prove that its distance from the centre is a harmonic mean between the distances from the centre of the Geometrical foci after reflection at the opposite portions of the surface."

NOTICE TO CORRESPONDENTS.

The Mathematical Editor will be glad to receive solutions of the following Questions proposed in this Journal ;—

25 ; 44 ; 46 ; 50 ; 69 ; 86 ; 88 ; 90 ; 96 ; 97 ; 98 ; 101 ; 112 ; 116 ; 120 ; 152.

Mathematical contributors are requested to communicate their address to the Mathematical *Editor*, College of Engineering, Madras.

NOTIFICATIONS.

BOMBAY.

List of appointments in the Educational Department for the month of February 1897.

1*st February* 1897.—Mr. Shaikh Rahiman Wallad Dada Banekar is appointed Gymnastic Teacher in the B. J. High School, Thana, from the 1st of April next.

5*th February* 1897.—Mr. A. C. Vaz is appointed Drawing Teacher in the Sir J. J. School of Art, Bombay.

13*th February* 1897.—The following appointments are made in the Elphinstone Middle School :—Mr. M. M. Choksey to be 2nd Assistant ; Mr. E. J. Mistri to be 3rd Assistant ; Mr. K. M. Nicholson to be 4th Assistant ; Mr. F. S. Mandeoina to be 5th Assistant ; Mr. K. D. Karana to be 6th Assistant ; Mr. M. E. Carpenter to be 7th Assistant ; Mr. S. H. Massani to be 8th Assistant ; Mr. P. M. Karkhanawala to be 9th Assistant ; Mr. N. D. Adrianvala to be 10th Assistant.

23*rd February* 1897—Mr. S. S. Deodhar is appointed 18th Assistant Master (Marathi Side) in the Elphinstone High School.